AMATEUR RADIO

OCTOBER 1992 RRP $3.25

- Dissimilar metals
- Coming in out of the cold
- 2 metres foxhunting . . . – update
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THE WIA RADIO AMATEUR'S JOURNAL

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AMATEUR RADIO

THE WIA RADIO AMATEUR'S JOURNAL

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Cover

This month's cover features a yacht in full sail, similar to the one owned by Richard Cortis VK2XRC, called "Mistress". Richard's article "Beware of Dissimilar Metals" is on page 10. Dissimilar metals in sea craft display some strange effects, and "... the Zinc anode is connected to the engine leg connected to the gear box, connected to the engine, connected to the ..."; read on!

Amateur Radio Service

A radiocommunication service for the purpose of self-training,intercommunication and technical investigation carried out by amateurs, that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

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Editor's Comment

Bill Rice VK3ABP
Editor

Ladies and Gentlemen

Perhaps the well known words of salutation to one's audience have lost some of their past significance. Perhaps today's audiences would prefer to be greeted with "Guys and Dolls", "Blokes and Sheilas", "Listen you mob", or, something even less formal or polite! Some might, but I suggest they would be a tiny minority even in these "enlightened (?) days".

What significance did the description carry once? I find it difficult to express in only a few words, for much of the civilisation of the English-speaking world is bound-up in phrases such as this. Books have been written on lesser trivialities. The word "civilisation" could be discussed for hours, if not days. But for our purposes, let us interpret "civilisation" as a process of learning to be civil, and "civil" in turn to mean being tolerant to all who behave like "ladies and gentlemen"! And how do THEY behave? They follow RULES of behaviour, not because they risk punishment otherwise, but because they have agreed that civil behaviour is better than arguments or insults or even worse. They may be said to observe a "gentlemens" agreement". (The absence of a "ladies" agreement" reflects the male chauvinism of a bygone age, not the absence of such agreement!).

We all know of the "gentlemens' agreements" which apply to many aspects of amateur radio. Mostly they concern band subdivisions between various modes of operation. As a letter to "Over to You" told us last month, there is an agreement that 14.070 MHz marks the boundary between CW and AMTOR on 20 metres, but some have seen fit to disregard it. Even firmer than agreements are rules and regulations about transmissions of bad language, the sub-bands available to different licence classes, the operating procedures by which interference is avoided, and the topics which amateurs may and may not discuss on the air, not to mention put on bulletin boards!

Some people choose to ignore some or all of these rules, thereby producing interference, offence or harassment to others, for no other reason than their own malicious self-gratification. It "gives them a buzz". Such people are emotionally immature or psychologically warped. They are anti-social and uncivilised. Regrettably, they reflect the violence of a world in which "ladies and gentlemen" are becoming less numerous and less influential. Perhaps these misfits could do more permanent damage by running amok with a gun; perhaps we should be glad they are only mis-using a radio!

Invariably they are seeking notoriety. By being ignored as completely as possible they may go elsewhere in disgust. Eventually they will victimise themselves, by the operation of another rule, basic to all religions, and perhaps most succinctly expressed in the Koran (in Pickthall's beautiful translation) as "Wrong not, and ye shall not be wronged". **ar**

WIA News

From the WIA Federal Office

Progress of New Licence Conditions

Despite what some members may have read in a commercial magazine, the final version of the dramatically changed and improved deregulated licence conditions for radio amateurs in Australia has not yet been approved by the DoTC hierarchy, let alone released.

These members may have wondered why the publication, which has no standing as a representative of the amateur service, should be releasing information which purports to be the new licence conditions when the WIA, the amateur service representative body which spent considerable time negotiating the best possible licence conditions with DoTC, has not released any information.

Simple. The WIA has honoured the request from the DoTC that no publicity be given to any of the proposals under discussion or potential gains or losses of privileges until the final deregulated licence conditions are officially released by the DoTC. The WIA has been advised that a statement releasing the details is expected to be made by the Minister on 31st October 1992. At that time, the WIA will publish the full details for your information.

Amateur Examinations

Since the announcement last month that the prices for amateur examination material from the WIA Exam Service would be increased from 1st October 1992, the WIA has noted the ill-informed comment and misinformation being widely distributed about exams.

As is usually the case, the most vocal critics are the least well informed (perhaps obtaining the facts first is something that must not be done in case they ruin a good "stir"?).

Here are some facts.

As at 31st August 1992 there were 394 examiners around Australia accredited to WIA Exam Service, 68% of whom are WIA members. At the time the DoTC approached the WIA to take over the exams, considerably

WIA Divisions

The WIA consists of seven autonomous State Divisions. Each member of the WIA is a member of a Divsion, usually their residential State or Territory, and each Division looks after amateur radio affairs within their State.

Division	Address	Officers		
VK1	ACT Division GPO Box 600 Canberra ACT 2601 Phone (06) 247 7006	President Secretary Treasurer	Christopher Davis Jan Burrell Ken Ray	VK1DO VK1BR VK1KEN
VK2	NSW Division 109 Wigram St Parramatta NSW (PO Box 1066 Parramatta 2124 Phone (02) 689 2417 Fax (02) 633 1525	President Secretary Treasurer (Office hours	Terry Ryeland Bob Lloyd Jones Bob Taylor Mon-Fri 11.00-14.00 Wed 1900-2100)	VK2UX VK2YEL VK2AOE
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VK7	Tasmanian Division 148 Derwent Ave Lindisfarne TAS 7015	President Secretary Treasurer	Tom Allen Ted Beard Peter King	VK7AL VK7EB VK7ZPK
VK8	(Northern Territory is part of the VK5 Division and relays broadcasts from VK5 as shown received on 14 or 28 MHz).			

Note: All times are local. All frequencies MHz.

Weekly News Broadcasts	1992 Fees	
3.570 MHz 2m ch 6950 Rebroadcast Mondays 8pm 70 cm ch 8525 2000 hrs Sun	(F) (G) (S) (X)	$70.00 $56.00 $42.00
From VK2WI at 1045 and 1915 on Sunday on the following frequencies and modes:(*1045 only) 1.845 AM; 3.595 AM morning and SSB evenings; 7.146 AM*; 10.125 SSB; 24.910 SSB; 28.320 SSB; 52.120 SSB; 52.525 FM; 144.120 SSB; 147.000 FM; 438.525 FM; 1281.750 FM; On relay on behalf of VK2WI on 18.120 SSB; 584.750 ATV Sound, Ch 35, Sydney region. Plus automatic relays to 2m repeaters surrounding Sydney and manually to many country repeaters. News headlines by phone (02) 552 5188; General Divisional information (02) 651 1489.	(F) (G) (S) (X)	$66.75 $53.40 $38.75
1.840MHz AM, 3.615 SSB, 7.085 SSB, 53.900 FM(R) Mt Dandenong, 146.700 FM(R) Mt Dandenong, 146.800 FM(R) Mildura, 146.900 FM(R) Swan Hill, 147.225 FM(R) Mt Baw Baw, 147.250 FM(R) Mt Macedon, 438.075 FM(R) Mt St Leonard 1030 hrs on Sunday.	(F) (G) (S) (X)	$72.00 $58.00 $44.00
1.825, 3.065, 7.118, 10.135, 14.342, 18.132, 21.175, 24.970, 28.400 MHz. 52.525 regional 2m repeaters and 1296.100 0900 hrs Sunday. Repeated on 3.605 & 147.150 MHz, 1930 Monday	(F) (G) (S) (X)	$70.00 $56.00 $42.00
1820 kHz 3.550 MHz, 7.095, 14.175, 28.470, 53.100, 145.000 147.000 FM(R) Adelaide, 146.700 FM(R) Mid North,(146.900 FM(R) South East, ATV Ch 34 579.000 Adelaide, ATV 444.250 Mid North Barossa Valley 146.825, 438.425 (NT) 3.555m 146.5000, 0900 hrs Sunday	(F) (G) (S) (X)	$70.00 $56.00 $42.00
146.700 FM(R) Perth, at 0930 hrs Sunday, relayed on 3.560, 7.075, 14.115, 14.175, 21.185, 28.345, 50.150, 438.525 MHz. Country relays 3.582, 147.350(R) Busselton 146.900(R) Mt William (Bunbury) 147.225(R), 147.250(R) Mt Saddleback 146.725(R) Albany 146.825(R) Mt Barker broadcast repeated on 146.700 at 1900 hrs.	(F) (G) (S) (X)	$60.75 $48.60 $32.75
146.700 MHz FM (VK7RHT) at 0930 hrs Sunday relayed on 147.000 (VK7RAA), 146.750 (VK7RNW), 3.570, 7.090, 14.130, 52.100, 144.100 (Hobart) Repeated Tues 3.590 at 1930 hrs	(F) (G) (S) (X)	$67.00 $53.65 $39.00

Membership Grades

Full	**(F)**	**Pension**	**(G)**
Needy	**(G)**	**Student**	**(S)**
Non receipt of AR (X)			

Three-year membership available to (F) (G) (X) grades at fee x 3 times.

less than 100 people under the previous system were on the DoTC examiners list.

During the month of August 1992, examination material was mailed out for 56 exam events, which included 486 examination subjects. That was an average of 23.1 examinations prepared and sent out each business day.

Also during August the material from 59 exam events, including 538 examination subjects, was returned to WIA Exam Service for processing. That was an average of 25.6 examinations marked and processed each business day.

311 candidates sat for examination during August, with an average of 1.7 examination subjects per candidate. The average overall pass rate was 50.93%.

Over 90% of examination material ordered was prepared and mailed out the same day the order was received from the accredited examiners.

Over 94% of completed examinations were marked, processed and the official results certificates posted out by certified mail the same day the exam was received from the accredited examiners.

During the eight months to 31st August 1992, a total of 1402 candidates sat for WIA Exam Service examinations.

25 of the exam events conducted during August 1992 were one candidate examinations. This means many accredited examiners are taking advantage of the excellent service provided by WIA Exam Service and ordering examinations as required by candidates. While this is great for the candidates (who under DoTC would have had to wait three months for re-examination but can now re-sit within a few days if desired), the unexpectedly high number of small events (not predicted by any of the many examiners under the previous system with whom the matter was discussed) has raised the costing considerably.

For instance, an order for one $5.00 Regulations examination, which is a common request, costs this office $5.20 in postage alone for mailing out the paper, and the results certificate in due course, before even looking at the salary costs and overheads in preparing and marking the examination.

In the original discussions with the DoTC which lead to the WIA accepting responsibility for examination administration, the agreement was that costs should be set so that the examinations fee income was not subsidising WIA members, but also that WIA membership subscriptions should not be subsidising examinations.

Now that all accredited examiners have been advised by mail of the increased fees, we now announce that as from 1st October 1992, examination materials will be supplied by WIA Exam Service to accredited examiners on the following scale:-

AOCP and NAOCP Theory	$15
Regulations	$10
AOCP and NAOCP Morse Receive	$15
AOCP and NAOCP Morse Sending	$10

This makes a total cost of $50.00 for a full set leading to either AOCP or NAOCP qualifications (less of course for a Limited exam). Experience so far is that very few candidates attempt more than this at any one event. It must, of course, be remembered that examiners are entitled to add to these charges to cover costs involved with hire of venue, copying of application forms, and return postage, etc.

Response from "Choice" magazine

We reported previously that the WIA had sent a letter of protest to "Choice" magazine about a statement in their July 1992 issue. A letter received this week from "Choice" states:-

"Your corrections to some of the information given in that article have been passed to our Managing Editor. Please accept our apology for any slur you feel we may have cast on the professionalism of licensed amateur radio operators. This certainly was not our intention.

Please be assured that it is our policy to publish corrections. However it is up to the Managing Editor to decide when this will be done, as space permits."

Intruder Watch

Federal Intruder Watch Co-ordinator, Gordon Loveday VK4KAL, presents the following item from the President of the IARU, Dick Baldwin W1RU, in the introduction to a manual for volunteer Intruder Watchers.

"Your help is needed.

For all of us, the ability to enjoy amateur radio is a rare privilege, one to be guarded zealously. Sometimes the protection of the Amateur Service can be accomplished by a few people who have worked hard and long to be at the right place at the right time, such as at an ITU conference. Sometimes the protection of the Amateur Service can be accomplished by those who spend a major proportion of their time in preparation for public service in the event of a natural disaster.

There is another way in which every one of us can serve, and that is in helping to rid the amateur frequency bands of "intruders", stations from other services who choose to operate in the amateur bands because of overcrowding in their own spectrum allocations. Unfortunately, such "out-of-band" operation is all too frequent, and it would be even more prevalent were it not for the dedicated work of a few volunteers, those individuals who make up the IARU Monitoring System.

How can those out-of-band stations get away with it? Well, paragraph 342 in the International Telecommunication Union Radio Regulations (the regulations which govern the use of radio internationally) says, "Administrations of the Members (of the ITU) shall not assign any frequency in derogation of either the Table of Frequency Allocations ... or the other provisions of these Regulations ***except on the express condition that harmful interference shall not be caused to services carried out by stations operating in accordance with the provisions of the Convention and these Regulations"*** **(Emphasis supplied).** *Thus, if there is no harmful interference, no regulation has been violated.*

Obviously, therefore, it is up to us radio amateurs to vigorously report the interference caused to amateur radio stations by stations from other services operating in our allocations. We need all kinds of reports. We need reports — we need many reports — which simply list the presence of an offending station. We need reports which go further and identify such an offending station. We need reports which go into detail on the technical

characteristics of an offending station.

Whatever your level of operating and technical skill, there is a place in the IARU Monitoring System for you. ***Your help is needed.*** *It is a task which brings the participant little glory but the satisfaction of knowing that he or she is doing something worthwhile. It is a task which results in some frustration, because to effect the removal of an intruding station often takes a great span of time.*

We are indebted to all of you who, whether representing your IARU member society or representing yourself as an enthusiastic and concerned individual radio amateur, take part in the work of the IARU Monitoring System to help maintain the amateur bands for radio amateurs. Your reward will come in knowing that you are contributing to the success of an important activity which strengthens amateur radio internationally.

The primary goal of the International Amateur Radio Union is the protection of the Amateur Service. Please join us in working toward successful accomplishment of that goal.

73 R L Baldwin, W1RU. President"

David Hunt Moves from DoTC Licensing

While wishing David Hunt all the best with his new job of helping to set up the new computer system for DoTC, the WIA regrets the loss of such a dedicated and approachable officer from the Licensing Section of the DoTC in Canberra.

The WIA has had many occasions to negotiate with David over the years, most recently on the matter of deregulation of amateur licence conditions and the revision of RIB 71. David has always given the Amateur Service a sympathetic hearing, and been willing to settle many controversial issues by discussion, un-emotive logic, and mutual compromise. Thank you, David, on behalf of WIA members, and all those non-member radio amateurs who have similarly benefited from these negotiations.

FCC Plans for Visitors Licences

The ARRL Newsletter of 10th August 1992 releases a proposal for visitors to the US to be permitted to operate for 60 days on the basis of a home country licence and a pass in a short examination on local rules applying to the proposed type of operation. This is to apply even to visitors from countries with which no reciprocal agreement is in place.

The examination of credentials, determination of appropriate privileges, and administration of the 20 question examination is proposed to be carried out by Volunteer Examiners already accredited within the US system. This proposal should greatly streamline the issuing of licences to qualified amateurs visiting the US.

How to Make a Complaint

Most of us do not need guidelines on how to complain. Most of us are quite good at it already. But how much of the complaining you do has any effect? The Federal Office of the WIA receives its fair share of complaints, and takes appropri-

ICOM

adds a new sophistication to the meaning of the word basic...

To most of us basic means you miss out on performance and quality, but not any more, the new Icom **IC-728** might be Icom's 'basic' H.F. transceiver, but in fact it makes many other transceivers look pretty basic by comparison!

$1678 *r.r.p. Call for special introductory pricing!*

Please allow $35 for postage and insurance within Australia mainland or Tasmania. Other areas please call for pricing. E&OE, all prices and information subject to change without notice.

You might think that a few years of reviewing H.F. transceivers would make any amateur a bit jaded, well obviously not, here is what Neil Duncan, VK3OK, had to say about the IC-728...

"Getting the IC-728 up and running is a treat"

"It almost runs itself — the learning time is very low"

"DXing on 20 metres is a snap with a hot little receiver like this one"!

The manual "is an absolute pleasure to use"

"I must say that the IC-728 offers very good value for money indeed."

Amateur Radio Action — 9 June 1992

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ate action as rapidly as possible.

Some of these complaints are simple, such as "My magazine has not arrived", or "My Call Book listing is wrong". These can be rectified easily, and the complainer (hopefully) remembers the service more than the original complaint.

However, when it comes to a matter of operating conventions or regulations, the rules must be:

1. direct the complaint to the correct body, and
2. provide evidence.

There is no point in complaining loudly on air, or on Bulletin Boards, that someone or something is not right. Take the complaint direct to the body concerned, in writing, and provide the evidence, the names, dates or recording of the offence. No authority can act on hearsay or unsubstantiated complaints.

The Amateur Radio service prides itself on being self regulating. Recent negotiations with the DoTC are leading to more deregulation than we have ever had, and it is expected that some operators will find this hard to handle. Some will feel that the DoTC is abdicating its responsibilities, but it must be realised that in the matter of complaints, as well as other fields, the amateur service is a very minor part of the DoTC's responsibilities, and resources cannot be allocated to complaints unless hard evidence is provided.

Interference to the 432 MHz Band

Several members complained recently about non-amateur usage of the 420-450 MHz band in the Sydney area. In the segment 430-450 MHz, the Amateur Service is the secondary user, but a number of signals had been heard which did not seem to be from the radiolocation service, the primary user. This issue was raised with DoTC early in August, to which a reply was received on August 28th, stating that:-

"• *Licences were issued to Hydrographic Surveys Pty Ltd to operate three Syledis services in the Sydney region on 432.982934 MHz,*

• *the licences were issued for the period 20/7/92 to 10/8/92 with a transmit power of 20 watts, and*

• *the licences were issued on the particular frequency as itwas an urgent short-term operation and equipment on other frequencies was not immediately available."*

The WIA has been assured that any future allocations in this band will be made in line with the policy of using frequencies below 427 MHz, and such allocations will be discussed with the WIA prior to the issue of licences.

The Ultimate Callsign?

We are reliably informed that the first "M" prefix callsign to be operated from the United Kingdom was M0RSE, which was operated by members of a number of clubs to celebrate the Bicentennial of Samuel F B Morse, 1791-1991.

Museum Under Threat

The WIA has been asked to add its weight to the protests being lodged in VK5 about the threatened closure of the Telecom Museum in Electra House in Adelaide. Apparently the building, which is "Heritage" listed and protected under the "City of Adelaide Development Control Act", currently belongs to AOTC, which intends to put it on the market as a money raising venture.

The building was the birthplace of the Overland Telegraph Project, which linked Adelaide to Darwin, and, through Darwin and the Java cable, to Europe. It currently houses a vast amount of history of Telecom and the preceding PMG Department, as well as Australian history such as the "Inland Flying Doctors' Service" and Marconi's exploits. It has been stated that AOTC intends to store the exhibits, or donate them to other museums.

Understandably, those volunteers who gave considerable time and resources to collect, organise and display the masses of historic material feel that every effort must be made to keep this world class Museum in this historic building. WIA members are requested to take any action which they feel appropriate.

Canadians Vote to Merge Groups

According to the ARRL Newsletter, the Canadian Radio Relay League and the Canadian Amateur Radio Federation have voted to merge. The respective societies will be dissolved, and the new combined body, the "Radio Amateurs of Canada" will be incorporated.

What's the Time?

A reminder to members that Divisional broadcasts may change their schedule with the advent of daylight saving. VK2 has advised us that VK2WI will change to the earlier starting time of 10 am (local) on the 25th October. Please check with your local Division for local arrangements.

DoTC Reports on Intruders

Intruder Watching (that is looking for and logging details of commercial intruders into the amateur bands) is a hard, slogging, but vital task carried out by a handful of "intruder watchers" around Australia. Monthly reports are compiled by the Federal Intruder Watch Co-ordinator Gordon Loveday VK4KAL and submitted to the DoTC in Canberra.

Gordon, and some of his intruder watching team, had been worrying lately whether the DoTC was taking any action on these monthly reports. The WIA Federal General Manager raised this subject during a recent visit to the DoTC in Canberra, and I now quote from a letter received recently from Ray Wyeth of the DoTC Monitoring and Interference section.

"I am writing to inform you of the Department's progress in resolving the out-of-band transmissions within the Amateur bands which were provided through the Intruder Watch Report.

The Intruder Watch reports are an invaluable asset in the Department's spectrum management monitoring strategy. For several years, the Department has relied on the Amateur fraternity to report instances of intrusion into the Amateur band.

The information contained in these Reports are used as the basis for our monitoring programs of these bands. Before the Department can approach any country over such occurrences which I might add are not in contravention with any international regulations unless services are affected, the country of origin of the

transmissions must be positively identified. This identification process involves extensive monitoring by the Department. The callsigns supplied in the Intruder Watch Report are not sufficient to identify the offenders as callsigns can be illegitimately used by bogus operators.

Falsely accusing another country of such operations would be both irresponsible and counterproductive to any resolution.

Extensive monitoring programs conducted earlier this year confirmed the countries responsible for a number of these out-of-band transmissions. As a result of these programs, approaches were made to the People's Republic of China, Viet Nam and Indonesia over specific instances. We also advised the International Frequency Registration Board which is the controlling body on spectrum management of our actions and they have asked to be kept informed on the evolution of these cases.

It is hoped that these countries will respond to our request and take action to remove these offenders as soon as possible. Depending on the circumstances, this may not be possible for several months. You can be assured that the Department does not intend to let the matter rest here. Should these services remain in operation after a reasonable period of time, further negotiations will take place.

500th Anniversary of Colombus

To commemorate the 500th anniversary of the discovery of the New World by Christopher Colombus in 1492, the Bahamas Amateur Radio Society announces a Special Event through the

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18386 Up-to-date Callsign Listings

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month of October, using the special call C6A500. This call will be allocated for use by authorised operators on various Bahaman islands, each to have sole use for a specific period of time. Starting with continuous operation all day on Monday 12th October from San Salvadore, intermittent monitoring will be carried out on a wide range of frequencies. In addition, all authorised members of the Bahamas Amateur Radio Society may operate during the month of October with a /500 suffix to their regular call sign. Two awards are offered, one for three different /500 contacts, and one for 10 different /500 contacts including C6A500.

The WIA Travelling President

During a recent business trip to South Australia the Federal President, Ron Henderson VK1RH, made time to attend the August monthly meeting of the VK5 Division. He took the opportunity to speak with the Divisional President Bob Allan VK5BJA, Councillors and members and bought a preamp kit from the VK5 equipment supply service. The meeting night was a buy and sell evening and Ron neatly avoided buying a series of 1960s Call Books when some caring member outbid him with a dollar for the collection.

This is the first of the Federal President's visits to Divisions and clubs to meet with the membership at large. Ron's work will take him to Alice Springs, Learmonth, Derby, Katherine and Darwin in October and he intends to contact amateurs in those areas.

SEANET Update

The WIA Federal Office has received a copy of the second Newsletter from SEANET '92, which includes a registration form and accommodation information. Members seeking further information on this major event, to be held in Darwin from 29th October to 1st November 1992 should write direct to The Secretary, SEANET '92, at PO Box 37317, Winnellie, NT, 0821, or by fax direct to Gary Woods on (61) 89 47 0310.

Jamboree on the Air

This is another reminder to members of the 35th JOTA to be held over the weekend of 17th and 18th October 1992.

Even if you are not involved in this activity, it may fall to you to work some of the young operators. Alternatively, it may be a matter of accepting that your favourite repeater or channel is occupied for large periods of time.

Please be patient and considerate. This weekend is one of the major showcases for amateur radio, and an excellent opportunity for recruiting new enthusiasts.

More on LPDs

As members know, the WIA is keeping a close watch on any interference potential that Low Powered Devices (LPDs) may have for the amateur service in Australia.

The Federal President, Ron Henderson VK1RH has obtained a certain amount of information from the RSPCA on LPD identification chips for use with pets. The coded chips, which are inserted beneath the skin of the pet are passive, activated by the readout device and return a unique code number. However, their interference potential seems quite low as they operate on 128 kHz, and have a reading range of only 16 to 20 cm.

Tall Stacks Celebration

Members with an interest in steam riverboats may be interested in the 1992 Tall Stacks Celebration of America's river steamboating era throughout October. The Greater Cincinnati Amateur radio association and the OH-KY-IN Amateur Radio Society are sponsoring on-air operation and issuing QSL cards featuring the 17 historic steam paddleboats that will assemble on the Ohio river at the Port of Cincinnati throughout October.

Participating stations will identify using the call sign suffixes "Tall Stacks" or /TS. This may well be a QSL card to display on the wall.

Russian Amateurs Have Problems

The ARRL Newsletter of 30th August 1992 reports an interview by Robert Howe K1MZB, with the first President and Vice-president of the newly formed Union of Russian Radio Amateurs.

The interview took place in St Petersberg, at the third annual International Ham Convention. This 1 1/2 page article, the first of a series, notes the problems being encountered by the Russian amateurs under the new administration, in that most of their financial support has been withdrawn, including the free postage of QSL cards, and access to surplus military equipment.

In the last year, 40% of Russian club stations have been forced to close for lack of funds. Russian amateurs are anxious to maintain links with other countries, including the USA which has provided strong support over the years. We await further information.

ar

VK2WI

Change of broadcast time

V K 2 W I

moves to 10.00am as from 25th October.

See VK2 notes.

Coming in Out of the Cold

Bob Hawksley VK2GRY
21 Wallumatta Road
NEWPORT 2106

AFTER A QRT of 36 years Bob Hawksley is back on the air as VK2GRY. He looks at how things were, are and may be, but feels that although things have changed they've not changed all that much.

My log book has two consecutive entries: 25/12/55 and 02/4/92. As QRTs go it's a candidate for the record books, but when I was first licensed as G3GBP in 1949 the main concern was keeping tabs on frequency. No ham station could operate without a wavemeter and for a ham on an airman's meagre stipend (I was in the RAF) the prospect of ever owning such exotic gear was remote.

The RAF very kindly let me use the workshop one — a BC221 made by the Americans — a thing of beauty and a joy to own. In those days we had to log EVERY transmission so log books were replete with plaintive (and unanswered) CQs.

The rigs? To start with I had a valve-driven (6L6) crystal oscillator and, yes, even with a crystal, a wavemeter was mandatory. Later, I went QRP with a quarter of a watt and astounded G4KF (who never ran less than a kilowatt) by getting contacts. But then, he wasn't a CW man. With a few turns of wire around the oscillator coil crocodile-clipped to the workshop HF antenna (it stretched the entire length of the hangar high above the tarmac) my signals leapt into the aether.

Oh yes, it was the aether then — that "hypothetical non-material medium the existence of which is postulated for theoretical reasons to explain electromagnetic phenomena". That's what the textbook said, and that's what we RAF signals types chanted. This was before transistors or credit cards or ballpoint pens or frequency synthesisers and chips were things we had with fish on Saturday nights.

The RAF and I went to Malta, and I operated from there as ZB1GBP and even across into Libya under a private callsign because nobody was supposed to operate from there (this was well before the days of Gadaffi). Then back home to a long QRT. Why so long? I didn't want to turn my wife into a radio widow, or my children into radio orphans. I'd come across so many orphans of that nature it left a deep and lasting impression upon me. A hobby is degraded if it wrecks family life.

So fast-forward to March of this year, and I come out of the cold as VK2GRY. My emergence from the frozen depths was prompted by my buying a dud receiver from a pawn shop. I fixed it up — the receiver I mean. It was barely book size; it had its own frequency synthesiser, a signal-to-noise ratio which wasn't conceivable with valves, a tiny power drain and an incredible sensitivity so that from the dining room table I heard things I would have thought impossible without a gleaming antenna stretching into the vastness of the heavens.

I sat in front of this receiver and was amazed (partly at its strange innards, but mostly at having fixed it). Except for one thing. It didn't light up and it didn't have a big tuning knob spinning smoothly on well-oiled bearings gathering up what the wild waves were saying. It lacked that essential romanticism but, nonetheless, I heard CQs and my heart went out to them.

Something had to be done. My family were grown up and had gone out into th world (or as far as the phone allows: "Hallo Daddy, ring me back!"). So, like the hosts of Midian, I prowled and prowled around the Aladdin's caves of York Street in Sydney and saw mystic and wonderful things.

"A 6L6, please," I asked of an elderly gent (well, my age, perhaps . . .). I had in mind to pick up where I'd left off with a crystal oscillator. He gave me the sort of sad look a lion might give when denied a Christian for lunch. "Haven't sold one for 25 years," he murmured, "but if you REALLY want one . . ." That REALLY was the unkindest cut of all. I promptly began a crash program to de-Rip-Van-Winkle myself until I felt able to face the world, and, what with one thing and another, I answered a CW CQ as VK2GRY, and how strange it all felt and how rusty my 20 wpm seemed to be.

It was that QRT-breaking QSO which started me off on an entirely new tack — a PC-operated CW encode/decode system. "You're nuts," growled a VK colleague. "Use RTTY!" But pigheadedness is an essential ham quality, and a prototype system is working (just), but there's lots of R&D to do before it will be anything but absolutely terrifying to use because of the speed with which one needs to execute a CW QSO.

Ultimately there will be a split screen and a CW QSO will be possible entirely from the keyboard and without the operator having to know a morsel of morse. Some people will think that's heresy and nonsense combined, but to me it makes sense and a logical extension of CW possibilities. After all, we live in an age where every man, woman and child is familiar with a keyboard and monitor. What's more, unlike RTTY, the traffic will be readable by any CW ham even though the system does go up to 50 wpm, but I can't type that fast. And the morse is lovely. Such a treat to take beautifully sent morse, and how proud one feels when sending it!

What of the future? PCs are still in their infancy and yet they have already

sired their own breed of ham — the hacker. And PC technology itself appears limitless as also its myriad of applications. Over the past 30 years the MTBF (Mean Time Between Faults) for commercial equipment has increased to the point where things no longer go wrong. Faults are now more pilot error than anything else. As always, the possibilities are boundless and the opportunities unrivalled.

Back in the seclusion of one's own shack things have changed but little. The exotic scent of the solder still lingers, RSTs come faithfully trotting back except that today some people send 5TT instead of 599 and overs conclude with HW? which was new to me. Tidal waves of FBs and CUAGNs and 73s still pour into one's ears, and often, with a good contact, callsigns are abandoned altogether (which mildly shocks me). Overall, though, CW operating is just as crisp as it ever was, but a touch more relaxed perhaps, and that's all to the good. Less pompous.

It's on phone though, that time has stood still. The ragchewers are still there grazing inconsequentially in the upper pastures of the band and calling to each other like star to faint star across the sky. The only real difference is that it's all LSB or USB, whereas in my early days it was nearly all AM. Operators don't have to keep logs any more or own wavemeters, but there are new noises — the chirping of impatient crickets for AMTOR and the diddle-diddle-diddle for RTTY. Yes, it's good to be home. Things have changed, but not much. It's really as if I never went away.

There is a youngish graduate in "my" (present) office (I am a freelance technical writer) who wants to get a licence, and I started the "concrete" way (one-to-one tutoring with key and buzzer), when it occurred to me that he would learn inadvertantly if he wrote a program that gave him sound for vision, and vice versa.

The result was astounding. Within two weeks he was up to 10 wpm, because to write the program he had to understand how to introduce the morse. Impressive! Then we received Pounding Brass's disk and found to our delight that others have done the same thing but differently. Naturally, we think our way is better ....

Beware of Dissimilar Metals

Richard Cortis VK2XRC
4 Victory Street
Clovelly 2031

APART FROM BEING an amateur radio operator, I occasionally attempt to pass myself off as a yachtsman. I am also the owner of a small sailing boat called "Mistress". Over the past year or so my boat has been suffering a lot of electrolysis.

Some electrolysis is always expected in boats, and zinc anodes are installed in various locations in an attempt to control the problem. However, the rate of loss of the sacrificial zinc anodes was particularly rapid on "Mistress". Anodes can normally be expected to last in excess of 12 months. However, mine were lasting only about six months, requiring the installation of additional costly anodes and, even more importantly, the slipping of the boat, which is particularly costly. The problem was critical because the boat has an aluminium "sail drive" leg which protrudes through the bottom of the boat and looks somewhat like the bottom end of the leg of an outboard motor. This aluminium leg is particularly susceptible to corrosion when electrolysis is present. Accordingly, urgent action was required.

Possible Causes

All the usual things were investigated first. Stray currents from electric cables laid in the bilge were investigated and no likely cause was visible. A number of cables were replaced as a precaution. However, the electrolysis continued unabated. Further research was undertaken and there were suggestions that the copper based anti-fouling paint on the boat beneath the waterline may have had some effect. However, the area on the leg and on the bottom of the boat around the leg had been coated with a different anti-fouling, and the general opinion was that this was not affecting the electrolysis. I continued my search.

Recently, I had the thought that the electrolysis problem first appeared at around about the time the new HF marine radio was installed. I commenced further investigation of the problem using my trusty salt encrusted multimeter. The usual installation for an HF marine radio in a sailing yacht involves the linking of the ground connection from the tuner to a keel bolt using a heavy copper strap. This provides a substantial and effective connection to earth either by capacitance if the keel is encased in fibreglass or by direct connection if not encased. During my investigation, the diver who cleans the marine growth from the bottom of the boat from time to time advised me that large areas of anti-fouling paint had become detached from the sides of the lead keel. As this area had been carefully prepared and primed prior to the last anti-fouling, my suspicions were raised.

High Voltage Keel?

My investigation started at the accessible end of the earth strap between the tuner and the keel. The earth strap was detached from the ground connection of the tuner and I used the multimeter to measure the voltage between the earth strap and the tuner. Initially, I set

the multimeter to the lowest DC voltage setting, 0.25 volts, in order to get a meaningful reading. To my surprise the needle on the meter swung across full scale. The next scale was selected and a reading in excess of 0.5 volts was indicated. I cannot give a more accurate reading than that as the multimeter is a cheap but robust item which lives on the boat and, because of salt spray and rough service, requires replacement quite regularly. Accordingly, I cannot afford a more sophisticated device. However, I find this meter provides a satisfactory level of service between replacements.

Having discovered this large potential difference, I then switched the meter from the voltage setting to the current setting, first selecting the 50 milliamp range. Again, the needle swung to full scale deflection, and a higher range was selected. It appears that a DC current in the order of 250 milliamps was flowing between the ground connection of the tuner and the keel. This initiated further investigation and it was found that the negative connection on the battery was continuous through the HF radio and onto the outer braid of antenna connection on the back panel. I also discovered the tuner was continuous from the outer braid connection of the coax from the HF through to the ground connection on the back of the tuner. The negative on the battery is connected by a heavy starter cable to the engine block which is bolted to the gearbox which is in turn bolted to the engine leg which protrudes through the bottom of the boat into the sea water. I will not go into the details of the sealing of this engine leg through the bottom of the boat but, suffice to say it is durable and very flexible. The zinc anode is attached to the engine leg near the propeller.

Connections

So now we have it. The zinc anode is connected to the aluminium engine leg, which is connected to the gearbox, which is connected to the engine, which is connected to the negative of the battery, which is connected to the HF, which is connected to the tuner, which is connected to the earth strap, which is connected to the keel bolt, which is connected to the lead keel. And there we have it, a zinc anode at one end of a piece of wire connected to a lead cathode at the other end of the piece of wire. So why didn't I see it earlier? Well, thereby hangs a tale. The original HF radio installation in the boat had a different tuner which contained a capacitor in the ground connection. In the earlier radio, the negative from the battery was isolated from the ground connection by this capacitor which effectively blocked any DC current. So there was no electrolysis problem.

Now, having found the source of the problem, how do I remove the electrolysis? Happily, the solution to the problem was fairly simple and, perhaps, somewhat obvious. As the metal engine leg is of quite substantial dimensions beneath the water line, it was tried as a dyna-plate and proved to be generally satisfactory. No serious degradation in the level of the HF signal was detected. Accordingly, I made a more permanent connection between the ground connection of the HF tuner and the engine block. The connection between the tuner and the keel bolt was disconnected and removed.

Messages

There are a number of messages to amateurs and yachtsmen in this problem I have suffered. Firstly, one must never assume that items of equipment which look similar and provide the same function are actually constructed in a similar manner. The second and most important moral is that one must always avoid connections between dissimilar metals where any form of electrolyte may be present. Sea water in the sea is a particularly good electrolyte.

The HF radio referred to on the boat is a marine HF radio. It is not an amateur radio as I don't hold the appropriate licence. The radio is used for normal marine communications particularly during long ocean races and return voyages. For the interest of amateurs, the antenna system consists of a ground connection to the ocean, a manual tuner, and an antenna which consists of the back stay which holds the mast up. The length of antenna from the tuner to the top insulator is about 14 or 15 metres, with a further metre or so from the tuner down to the ground connection. The backstay acts as a random radiator and is tuned by the manual tuner. The system is useful up to about 6 to 8 MHz. Above about 6 MHz, the capacitance of the top insulator begins to look like a short circuit to the radio signal and the system loses efficiency. For 8 MHz and above, I normally use a supplementary whip antenna in amongst the forest of other (amateur VHF and UHF) antennas on the stern rail.

I hope this brief article may be of use to someone, and hopefully it will assist others in the removal of similar problems and save some wastage in materials which would otherwise be destroyed by electrolysis. **ar**

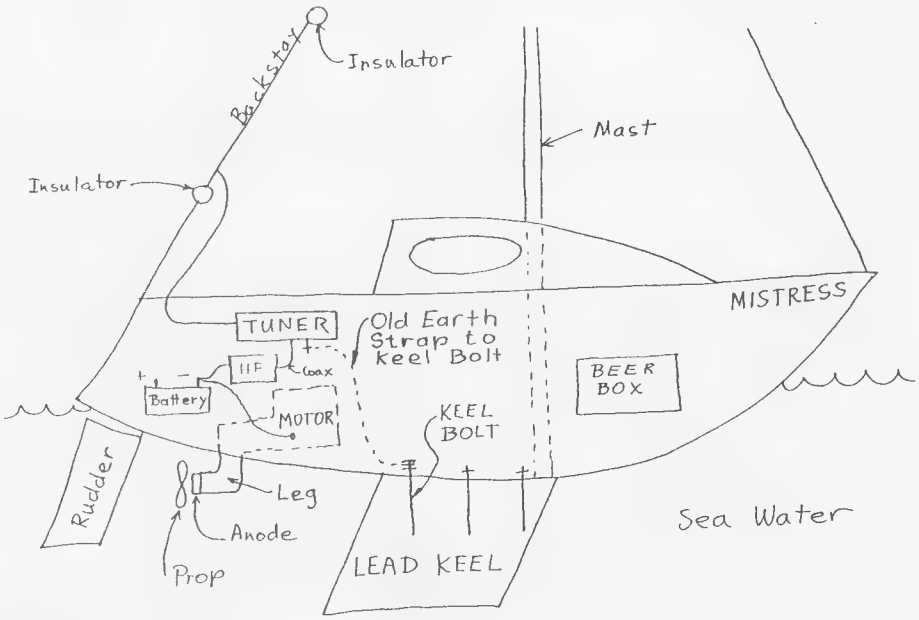


Figure 1.

Two Metres Foxhunting Antenna-Update

Des Greenham, VK3CO
16 Clydesdale Court
MOOROOPNA 3629

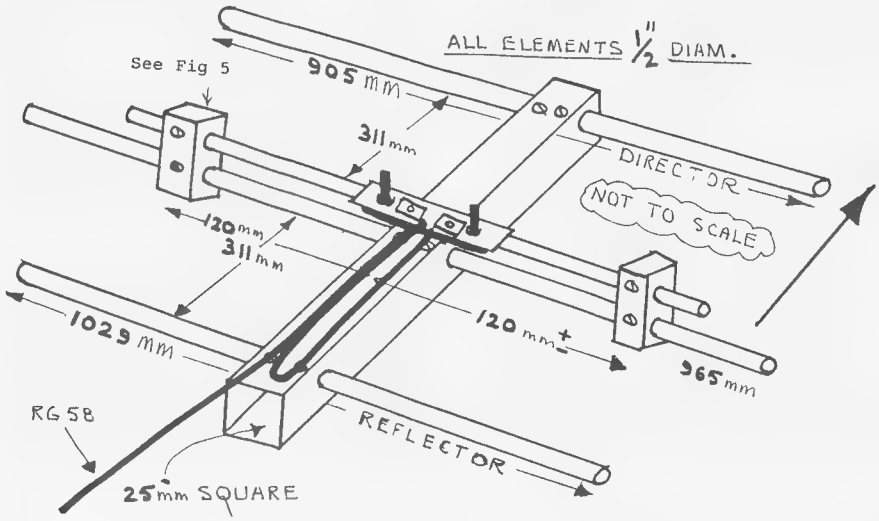


Figure 1. 2 Metres Three Element Yagi Antenna.

Introduction

WITH THE EXCITEMENT of the Balloon Launch at Shepparton and Melbourne recently, there was increased interest in "Fox Hunting" should the balloon come to earth locally. To assist in this idea, a copy of the antenna suggested by Greg William VK3VT was printed in our local newsletter. Being a person always interested in antennas, I built this one exactly as per diagram only to find on test it had a poor impedance match, resulting in a SWR of 3:1. I tried all available adjustments, with no improvement. As a last resort, I read Greg's article and found he also had a similar result! But, as he explained, for reception only this was not so important. I then became interested in improving the match so I could use the antenna whilst travelling "up north" for improved access to two-metre repeaters. The attached changes are submitted with due respect to Greg's original design.

Design and Construction

The antenna is a basic three-element Yagi using standard configuration. The boom is 25 mm (1") square aluminium, and the elements are 12 mm (1/2") round tubing reclaimed from old TV antennas redundant since TV aggregation. The elements should be polished with steel wool and mineral turps to remove accumulated oxide. The element mounting is achieved by drilling 1/2" holes through the boom and, after passing the elements through, they are centrally locked in position by two self-tapping screws or pop rivets. To obtain a balanced feed, a 4:1 ratio balun is used. This will lift the impedance to 200 ohm balanced, from 50 ohm unbalanced co-axial cable. To obtain an accurate match, two series fed adjustable capacitors are used in conjunction with adjustable impedance bars. With the clamping blocks set at 120 mm each side of centre, and SWR of 1.1:1 can be obtained by careful adjustment of the trimming capacitors. Care should be taken to keep the two capacitors at the same value — this can be done by carefully moving the adjusting screws together to obtain minimum SWR.

The tuning stub bars are mounted on the boom using a TV antenna insulating block. The twin trimmer capacitors are mounted on a piece of PC board 100 mm × 20 mm (Fig 2). Gaps are cut through the copper using a file or chisel as shown in the diagram. Holes are drilled to mount the trimmer capacitors. After soldering the trimmers in place, the finished PCB is mounted copper side down and trimmers upwards on the TV insulating block. The 4:1 balun transformer is made from a length of RG-58 cable (NOT foam) cut to 680 mm measured from the ends of the braid (see Fig 4). The balun is taped to the boom and the feed cable brought

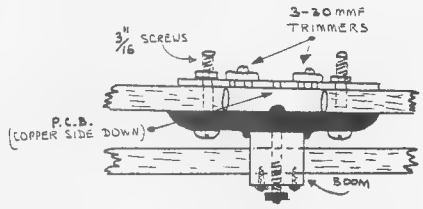


Figure 2.

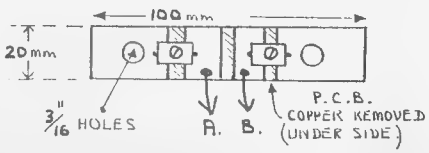


Figure 3.

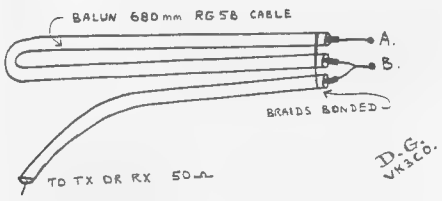


Figure 4.

out behind the reflector. The feed points A & B should be soldered to te PCB as shown. The plastic box suggested by Greg is another method of holding the balun, and may be preferred for fox hunting. The general construction is self-explanatory from the diagrams, and if followed carefully, good results should follow. Tests have shown the antenna to have a forward gain of 6-8 dB with substantial front/back and front/side ratio. For home operation and mast mounting the boom length could be extended 100 mm behind the reflector, and a TV clamp and U-bolt fitted. Holes should be drilled both directions to enable horizontal or vertical polarisation. Naturally, for outside operation, the trimmers need to be waterproofed. This can be done by using a plastic box as suggested by Greg, or sealing the trimmers with silicone sealer after adjustment. The normal silicone MUST NOT BE USED as it contains acetic acid and will soon cause corrosion. A non-acetic acid type should be used (this usually branded RTV type — Ed). this should be generously applied over and around the trimmers and also over the ends of the co-axial cable balun.

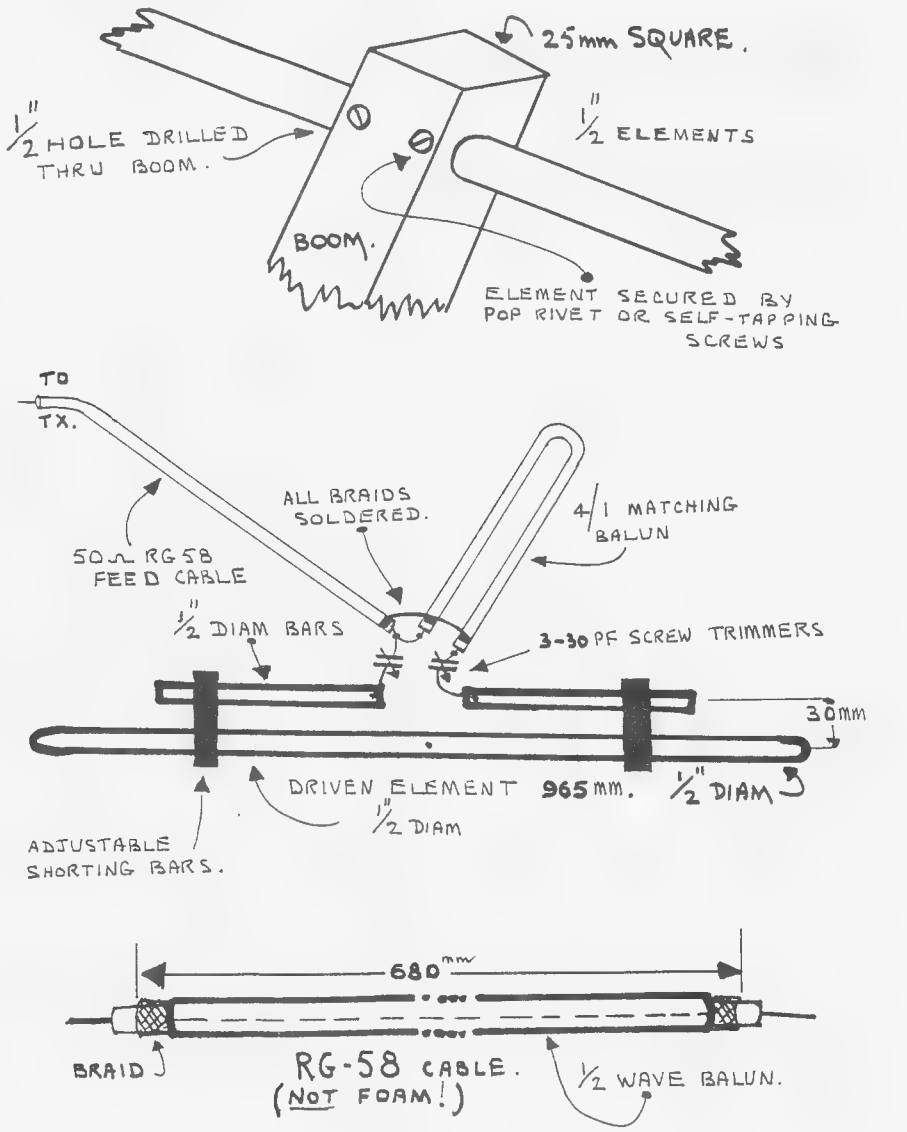


Figure 6.

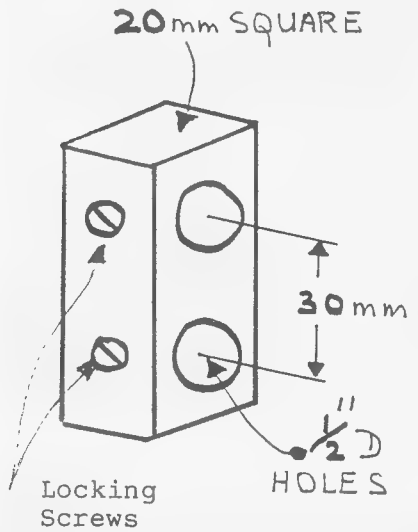


Figure 5.

For general use and fox-hunting, this antenna is simple to build and performs well. My thanks to Greg for the inspiration. See "AR", October 1988 for full details of how to use this antenna for fox hunting. **ar**

Have you advised the WIA Federal Office of your new Callsign? Use the form on the reverse side of the Amateur Radio address flysheet

Random Radiators

Ron Cook, VK3AFW and
Ron Fisher, VK3OM.

No Holes Antenna Mount

SO THE YF IS NOT at all keen about you drilling holes in the roof of the family sedan, or anywhere on the body. Unreasonable perhaps but probably an edict that must be obeyed. So how do you get your VHF or UHF antenna up high enough to avoid screening by parts of the car and maintain efficiency? Clip on mounts often have a low efficiency when used with quarter-wave whips because the resistance to the car body can be quite high. The answer is a glass mounted antenna a la mobile phone systems.

RF Industries are well known as Australian makers of commercial antennas but it seem few amateurs are aware that several of their On Glass (R) antennas actually cover the 2 m and 70 cm bands. Note that the phrase "On Glass" is an exclusive trade mark and can only be associated with their products. Their model APR151.3 can be adjusted to operate anywhere in the range 144-174 MHz. It can be purchased for around $60 from any of the many RFI agents. Another model AP-143 can be adjusted to any frequency in the range 138-150 MHz, and it should also be suitable.

Both are half-wave antennas and therefore are essentially ground independent. The AP-143 is 66 cm long and has a self supporting loading coil about 1/3 of the way up its length. The APR151.3 is 83.8cm long. The VSWR can be adjusted to better than 1.5:1 and both have a 6 MHz bandwidth.

For UHF the model APR450.5G is recommended. This is a gain type collinear tuneable from 410 to 512 MHz and the 1.5:1 VSWR bandwidth is typically 8 MHz. The radiator has a phasing coil in the centre and is 76.2cm long. The model AP454 covers 410 to 520 MHz and is an end-fed half-wave. It is 203 cm long.

The antenna is typically mounted centrally high on the rear window and the matching unit directly behind it on the inside. An adhesive coating allows installation to be completed in minutes but, using the correct solvent removal and clean-up is claimed to be just as easy. The antennas are easily removable for going through a car wash.

All antennas are rated at 100 watts and are made from stainless steel coated with a black finish for aesthetic reasons. Stainless steel and chrome plated hardware is used elsewhere. The VHF antennas and the UHF collinear are supplied with 4.7 metres of RG-58/U cable fitted with a PL-259 connector. The AP454 is supplied with 4 metres of cable with foamed dielectric.

Another product from RFI that may be of interest is a coupler designed to allow a VHF transceiver to share the AM/FM whip antenna. The cost of this is about $50 and offers another alternative for the no-holes edict. Efficiency is likely to be less than a glass mounted antenna.

All in the Mind

Have you ever thought what radio waves look like as they radiate from your antenna? As we cannot see this event we can only imagine the process, augmented by our interpretation of measurements made with various instruments. I have always imagined that a snapshot of a radiating dipole, taken with a very special camera, would look like an onion, each successive cycle developing beneath its predecessor, and all expanding like a bubble until the curvature was negligible and far field or free space conditions prevailed. I suspect that many other radio amateurs also share similar images.

In the Spring (Northern Hemisphere) edition of Siemens Review on page 9 in an article by Uwe Leupelt, there is an interesting diagram showing a wave propagating from a dipole. Taking into account that it represents one side of the dipole and a slice through it as well, the picture is a bit different from my expanding onion. The field lines appear to form flattened circles on each side of the dipole. Actually they represent surfaces of constant magnetic field strength which form concentric tubes of somewhat flattened shape centred on the dipole axis. Thus with our special camera we would see a series of concentric doughnuts, each one layered internally like an onion. Can you imagine that? I shall leave the colouring to your imagination.

Restricted Site Drives Amateur to Pot

Jim, VK2DJM, whom you may recall operates with a dipole wrapped

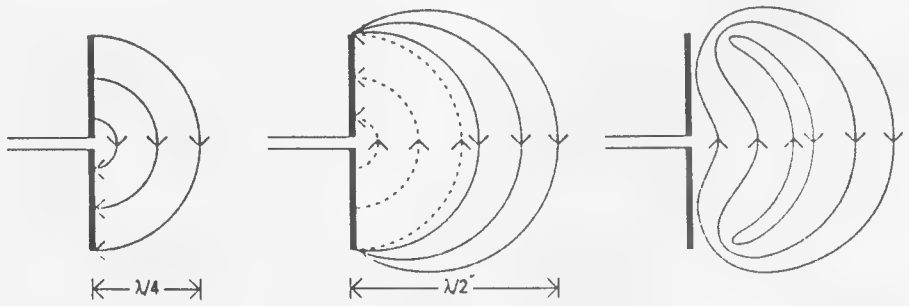


Figure 1 — Basic antenna principle: Wave propagation from a half-wave dipole.

around his home unit, has sent in a copy of an article from 73 Amateur Radio Today. The April issue has an article by David, N1GPH, called "The Flower Pot Special".

This describes another solution for the apartment or flat dweller who needs an antenna but doesn't want to make it too obvious. David's solution is to mount a mobile whip on a base which is set in concrete in a flower pot. The Outbacker all-band HF vertical is used in the system described but any mobile whip would do. The ground plane (or simulated automobile body actually) can be either a balcony rail or strips of copper foil hidden under carpet. Plastic imitation greenery wrapped around the whip is used to complete the indoor or balcony "plant". Some wood chips on top of the cement in the flower pot complete the deception.

There is of course always the possibility of interference problems and although the antenna may be well disguised, the neighbours will eventually find out the truth. As David says, while you do not need to advertise that you have an amateur station operating from the fourteenth floor, you should act as a responsible amateur and good neighbour. To do otherwise not only blackens your own image, it rubs off on all other radio amateurs.

Oh yes, Jim does use a balun with his dipole.

The TH3JR Revisited

Ken, VK3AFJ, has written in describing his experiences with a TH3JR and his "threepennies worth" follows. Thanks Ken for an entertaining and educational article.

I originally purchased my TH3JR about 17 years or more back and it stayed in the air until December 1989, at which time it was dismantled and brought to a new QTH where it was left in pieces on the ground until a couple of weeks back, when inspired by "Random Radiators", I decided it was time to refurbish it and get it back into the air.

After a considerable amount of effort, and the purchase of a handful of bolts and nuts, the damage suffered over the past couple of years was rectified.

The first major problem was a source of supply for the weather caps. Ultimately a visit to the well known rubber retailers produced some plastic caps which, by punching a hole in the centre, filled the job very well. They had nothing to fit the ends of the elements and eventually some oversize caps were glued on.

At this point I must admit that my perusal of "AR" had been very brief, but I had noted that the sketch showed a change in the length of the 20-metre section of the driven element.

So, armed with an assortment of spanners and screwdrivers, plus the copy of "AR", assembly was undertaken. The assembled beam was then supported on a couple of boxes 30 cm high to keep it off the grass. Just for the fun of it, it was connected to the rig and a trial call put out. A reply from VK4 and an S7 report. Not bad under the circumstances, except the beam was side on to VK4. Not to worry, the lawn had to be cut, so to get the beam out of the way it was set up on top of a step-ladder, but facing VK4. You guessed it — still S7.

At this point of time it was still undecided as to how, when or where the beam would be erected, as there is practically no space in my yard to swing even the shortened beam. Thanks to a very co-operative neighbour, who already supplies the tree to support one end of the trapped 80 m dipole, I had the okay to swing it over the boundary line. To sum up, the beam is now up and in competition with a 40-ft gum tree, the boss's clothes line and the roof of the house. Due to structural problems it is at the fantastic height of five metres.

Despite all these adverse effects, maybe we may just manage to work a bit of DX. But first, let us do some listening and find out how well or otherwise it works. Gain on all bands, only marginally better than the dipole, back to front ratio — nothing detectable, and only a slight drop in signals off the side. So far all I have achieved is to get the beam off the ground and out of the way. I could have achieved as much taking it to the local scrap-metal merchant.

Time to re-read (and study) "AR". Bingo! The sketch shows only the driven element altered, but the text says both driven and director elements are shortened. Down comes the beam and the director is shortened, then back up for some more tests. Perhaps there is some improvement on 20, but then again, it could be my imagination. Leave it for a few days and think about the problem.

The only thought to come to light was the fact that the original manual gave the measurement in inches. Had somebody made an error in the conversions to metric? This really dropped my morale. Although I have been at this QTH for two and a half years, I still have half a dozen boxes and cartons to unpack, one of which contains over 40 years accumulation of instruction manuals, data sheets and miscellaneous scribbled notes, and to get to these boxes involved clearing out most of the garage. Okay, may as well as get on with it and found carton #3 had what I was looking for.

Instruction sheets for the TH3 and the BN86 balun found, conversions checked and found to be correct to the nearest millimetre. But, wait! Bob, in his letter, says that the director and reflector lengths are measured from the centre of the boom. Not in my book. It definitely shows the measurement as being from the outside edge of the boom. The only measurement shown from the centre of the boom is to the feed points on the driven element which is given as six inches. But why had I altered the dimension marked A on the driven element from 11-3/4" to 10"? This, in effect, reduced the inner section of the driven element from 2127 mm to 2083 mm. Let us read a bit more of the manual. Last page in italics "if you want maximum back to front ratio, change dimension A to 10 inches". Eureka!!!

Out came the spanners and screwdrivers once more. Again the beam comes down and element lengths are altered. Measurements checked and rechecked, back up with the beam, and some more listening checks. Results — a good two S points up on the dipole, three to four S points back to front, and very little off the side. Pretty close to the maker's specifications and, considering the adverse conditions under which it has to operate, quite acceptable.

While all the paperwork is out, may as well read up the info on the BN86 Balun. What's this? "Do not use this balun with any matchboxes, antenna tuners, transmatches or other such device. Out of resonance operation

causes the breakdown voltage of the balun to be exceeded .... etc, etc." I have been using a Z match coupler (RSGB Handbook 1962 edition) ever since I first acquired the beam, and have had no problems and, as the balun is rated at 2 KW PEP, I doubt that I ever will with my 100 or so watts.

This does raise an interesting point. The TH3 manual gives VSWR charts for the three bands, both for CW and phone element lengths. Briefly, the phone charts show for 10 metres, 2:1 at 28.2, 1.2:1 at 28.6, 1.5:1 at 29.4. On 15 metres they show 2:1 at 21.13, 1.4:1 at 21.25 and 1.8:1 at 21.4. On 20 metres the figures are 2:1 at 14.15, 1.25:1 at 14.25 and 1.6:1 at 14.35. No doubt these figures would be acceptable with valve finals, but I for one do not like them with solid state finals, hence my coupler will be staying in service. Perhaps there is now a better tribander available, but at my time of life, I doubt that I would bother to change over. My only concern now is the possibility of metal fatigue after so many years of swinging in the wind.

To finish the story, "she who must be obeyed" has issued an edict that for obvious reasons, the clothes line is to be moved from under the beam. Next week I might just start thinking about it.

Coming Up Next

In the next episode or two we have an interesting item on a Balun for the G5RV. We will return to the topic of tree antennas and describe some early work (1919) done on them. Also we will cover a great idea that flopped, the underground DX antenna. As they say, it seemed like such a good idea at the time.

73 from him, and 73 from me.
ar

Stolen Equipment

Stolen from Dion VK2PD on 27 August 1992, on Standard C528 FM Handheld Transceiver, including manual. S/B OOE 150667.

EMC Report

Hans F Ruckert
25 Berrille Rd
Beverly Hills 2209

More and different EMC problems do occur, as more use is made of RF emitting or sensitive services and appliances. This is the result of worldwide development. The vital question for us radio amateurs is "Who is to be blamed?"

1) "CQ-DL" 8/92:

There was again in June the "Ham Radio" fair and equipment exhibition at Friedrichshafen on Lake Constance in Germany, with over 20,000 visiting radio amateurs from many countries. The patron, the Federal Minister for Post and Communication, Dr Christian Schwarz-Schilling, was unable to attend, but his address contained some remarks about the new version of the "Law on Amateur Radio", which were not particularly liked by the radio amateurs. The wishes for a successful fair, and the noting of the good cooperation between the ministry and the competent representatives of the DARC were also mentioned. The original law from 1949 (and amended) served the radio amateurs well, and the planned total rewriting of the law, as now started by the present ministry, did not appear to be necessary to the DARC. Schwarz-Schilling stated: "We have to seek and find regulations which help to secure amateur radio in the future in an environment of threats of many kinds. One must not overlook that radio amateurs, together with all other radio communication users worldwide, are facing a new orientation, and that they will survive in the long run only if they fit into the EMC environment. Accept the challenge: "QRP and QRPP is the motto", if you wish to operate also in the future, often in close proximity to your neighbours!"

If one considers that the current unification of European Common Market EMC regulations is watering down the already modest German levels of required passive immunity of consumer electronics (3 Volt/metre test cell), one can consider the minister's opinion only with the deepest pessimism. Does this mean that amateur radio with medium and higher transmitter power will in future only be possible in the Outback (not easy to find in crowded Europe), far away from neighbours and their unselective RF susceptible entertainment electronics? This would be the end of amateur radio as known so far. In contrast, it was pleasing to hear the remarks by Elmar Mueller, a member of Federal Parliament and assistant chairman of the Federal Parliament Committee on Post and Telecommunication on other EMC regulations.

The executive of the DARC requested several meetings with the Minister and the EMC parliamentary committee, stating that the existing amateur radio law does not need a complete rewriting, and that present EMC susceptibility standard of entertainment electronic appliances is not ideal, but is better than the proposed European Common Market standards. These meetings took place, and it is hoped that the modified draft now placed before the Parliament will make amateur radio (as we know it) also possible in the future. Also the manufacturers and dealers exhibiting a wide selection of amateur radio electronics gear, who made a roaring success of the fair, would not have been happy with the "Minister's Opinion". Radio amateurs

of other countries can learn from this case of dealing with politicians.

2) "QST" April and June 1992:

Wind Profiler Radar

We already have land-based weather radar for cyclone warning, and aircraft radar to warn the pilot of air turbulence, which may cause the aircraft to drop out of control several hundred metres. To improve weather forecasting in the US, a net of "Wind Profiler Radar Stations" is being set up, mainly in the less densely populated states. This development is of interest to radio amateurs, because the stations have been authorised to operate on 449 MHz, just inside the shared part of the 420-450 MHz amateur band. Radio amateurs are concerned that these radar installations may interfere with amateur repeater operation. But the wind profiler receivers may also be affected by UHF transmitters operating on nearby locations. The power level and the low-elevation peak side-lobe value are of particular interest to radio amateurs. See Figure 1. A metal fence is used to reduce this unwanted radiation. Other radar services have already had EMC problems of this type.

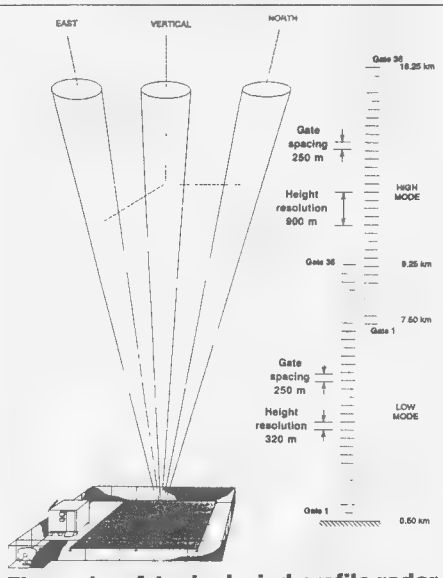


Figure 1 — A typical wind profile radar emits one vertical and two nearly vertical beams from its 40 x 40 foot collinear array (Graphic reproduced from QST June 1992).

3) Multi-storey Home-unit TV Reception and Amateur Radio:

I received a report from a radio amateur (professional electronics engineer) who lives in a top-floor unit in a northern Sydney suburb. He tried to use his station with a ground-plane antenna installed on the balcony. No luck! The home units around him seemed to use untuned wideband masthead preamplifiers (the type which is illegal in Germany).

Even when using low power of under 100 W, the phone will ring and a neighbour will complain about TVI. High-pass filters installed close to the TV tuner would provide the necessary selectivity the preamplifiers are lacking. But with so many cases involved, there is no hope for our friend.

4/1) Radio Communication June 1992 (submitted by Norm Burton)

There is a detailed listing of standards of alarm systems. There are intruder detectors using ultrasonic, microwave and passive infrared alarms. It will be interesting to see whether the immunity level of 10 V/m proves to be adequate in practice near amateur stations. In theory, an amateur station transmitting 100 W ERP (Effective Radiated Power) produces a free-space field strength of 10 V/m at a distance of seven metres from the antenna, ignoring near-field effects. In practice, these effects can result in considerably higher electric strengths at HF if the distance from the antenna is a small fraction of a wavelength. In the "far-field", the free-space field strength is inversely proportional to the distance in metres, so doubling the distance halves the field strength in V/M. Field strength is proportional to the square root of the power, so at a given distance, 400 W produces twice as much E field strength as 100 W.

4/2) A conference in Sweden discussed the RF susceptibility of many modern telephones. The test involved injecting a modulated RF voltage of one volt across the line and measuring the Sound Pressure Level (SPL) of the interference at the telephone earpiece. With the best telephone, this interference would be undetectable to the telephone user, while with the worst it would be about 40 dB louder. The Motala 198 kHz transmitter could also be heard this way!

4/3) Biological EMC

Several experts and others have discussed in the press the possible effect of electromagnetic radiation on exposed persons. The whole spectrum from 50 Hz with 100 kV to VHF handheld transmitters (telephones), and microwave ovens and radar transmitters is looked at. A report highlights possible problems which can arise if microwaves are allowed to heat parts of the body. As the eye has no blood supply to cool it down, it is particularly susceptible, and heating effects of microwave radiation can produce cataracts on the lens of the eye. By the time the lens has been affected, the rest of the surrounding facial tissue would be at 40 degrees Celsius, which is very much too hot to be comfortable. "Electronics Weekly", in an article of 8th January, estimated that you would need to transmit continuously on a cellular telephone for two hours to get to this point.

4/4: Young engineers seem to design electronic equipment by operating computers, and by doing so they do no longer learn what radio amateurs and hi-fi gear homebuilders experience: earth-loops, and how to overcome this problem. **ar**

ELECTRONIC DISPOSALS

27 THE MALL
SOUTH CROYDON

Specials:

3 watt ceramic resistors 10c each
40 amp 12 V relays single throw $4
5A Bi Metal cut outs 35c each
CB/10m end fed mobile ant comes complete with coax and mount $12.00
Mains caps 240 v $1.00 each
ECL — ICs 10.000 series $3.50 per tube
2716 70c each or $10 per tube
9016 16k ×$12 per tube
TL082 Low noise op amp $1 each
10 μF 40 v low leakage Electrolytics $6 per 100
2200 μF 50 V axial 90c each plus lots components at reduced rates.

KITS (OR PARTS, BOARD, ETC.) AVAILABLE FOR DREW DIAMOND'S PROJECTS

A Packet of Packet

Kevin Olds VK1OK
238 Southern Cross Drive
Latham ACT 2615

THIS IS THE FIRST in what I hope will be a continuing series of columns on the subject of Packet Radio. I will be acting as co-ordinator for the column, drawing on contributions and ideas from a variety of sources in order to bring the column together. It won't be a monthly column, rather it should be appearing every two months. However, for the column to be a success, I will need feedback from you, the readers, to tell me what you think and what topics you would like to see covered in future columns. Without the feedback, the life of the column will be relatively short.

To commence this column, I have reproduced part of the report on the Future of Packet Radio Seminar held in Canberra during April 1991. Although it is now over 12 months since that seminar was held, its findings are still relevant today. It is interesting to peruse the recommendations in the area of de-regulation of the Amateur Packet Radio arena and compare them to the recently published Draft Licence Conditions for the Amateur Radio Service. Most of what was recommended by the meeting has been incorporated in the Draft. Those attending the meeting knew they were recommending major changes in the licence conditions but were not hopeful of rapid progress. It just goes to show what can be achieved. Full credit to the WIA for its achievements in this area. I'm sure all Packeteers are like me awaiting the implementation of the final Licence Conditions so that our hobby can continue to grow.

Enough from me for the moment, what follows is an edited version of the report I referred to above.

Future of Packet Radio Seminar — Report on Proceedings

Introduction

On Saturday 6 April 1991, Packeteers from New South Wales, Queensland, Victoria, South Australia and the ACT met in Canberra to discuss the future of the Amateur Packet Radio Network in Australia. A number of agreements were reached in defining the aims and objectives of the Packet Radio Network, its levels of performance and characteristics. From this arose a number of related issues that need to be resolved in order for implementation of an acceptable, working network to proceed. These matters are documented later in this report.

Function of the Amateur Packet Radio Network

The function of the Amateur Packet Radio Network is:
to provide for the transfer of digital information between amateur packet radio stations.

Note that the concept of an Amateur Packet Radio Network does not include digipeaters. Digipeaters may have a role to play in providing some users with access to Network entry points.

Types of usage can be characterised by the speed of transmission required as follows:

Lowest Speed — for example keyboard to keyboard, including keyboard to BBS.

Moderate Speed — for example BBS to BBS and Computer to Computer.

Higher Speeds — for example digital voice.

Highest Speeds — for example 24 bit Colour Pictures.

The priorities for provision of Network facilities were seen as being inversely related to speed ie. slowest speed, keyboard to keyboard should have the highest priority. The slower speed modes are considered to be "real time" modes and thus should have priority in traversing the network over other "non real time" modes.

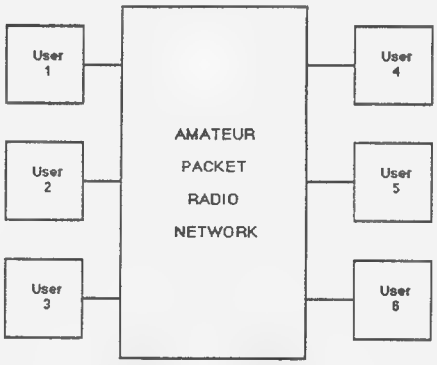


Figure 1.

Coverage of an Amateur Packet Radio Network

The coverage of the Amateur Packet Radio Network should be Australia-wide. However, the same capabilities may not be provided at all points depending on issues such as traffic density, user density etc. The determination of what facilities are to be provided in an area is seen as an implementation issue.

In establishing the Network, implementation should be mindful of current and emerging international practices.

Characteristics of an Amateur Packet Radio Network

The following characteristics of the Amateur Packet Radio Network are seen as being highly desirable but NOT mandatory:

Connectivity — all parts of the Network should interconnect to form a coherent whole;

Transparency — the Network should be transparent to network users, able to pass any form of data without user conversion;

Access — basic access to the Network should be available to all AX25 Level 2 users;

Access — other access methods should be provided according to local needs and practices;

Redundancy — where resources permit, the Network should provide redundant paths.

Levels of Performance

The following levels of performance are seen as being desirable minima for the Amateur Packet Radio Network:

The round trip time for messages between capital cities should average about 10 seconds.

Within the Network, the target through-put is an average of 5 Kilobits per second.

This level of performance is seen as being attainable with current levels of technology. As better technology is developed and/or becomes affordable, these target levels of performance will be reviewed.

Related Issues — Deregulation

The major issue facing the implementation of an acceptable Amateur Packet Radio Network is that of regulation. Consider the following conceptual picture of the Network.

For regulatory purposes, the Network should be considered as an entity(s) in its own right with a network Manager(s) responsible for its operation. Traffic within the Network is different from traffic between ordinary packet users (compare to the existing situation with linked repeaters — the link is considered in a different light to the repeaters and its users).

Within the Network, any band available to the Amateur Radio Service should be useable, within normal licence conditions, for the carriage of network traffic, without restriction, subject to normal Amateur Band Planning practice. This means that where HF Bands are proposed for sections of the Network, international co-ordination in terms of band plans etc may be required via IARU. Data being passed by the Network, belongs to the Network and should only require Network identification. Where necessary for Network Control or regulatory purposes, Network traffic can be decoded by monitoring stations.

The legitimacy of contacts between users via the Network should be governed by the level of privileges held by the two parties and be determined as if the Network was not present. For Example, when User 1 wishes to connect to User 5 via the Network, then the links from User 1 to the Network and from User 5 to the Network must both take place on a band for which both User 1 and User 5 are licensed.

Other Deregulation Issues

The current Australian definition of Third Party Traffic is too restrictive and out of step with international practice. The WIA should continue to press for its amendment.

With the rapid advances being made in technology and consequent changes on the packet scene, in keeping with the experimental nature of the Amateur Radio Service, station and message identification requirements should be relaxed to treat packet radio the same as any other mode of operation. The days when packet radio could be considered new and special and requiring special treatment are long passed.

Editor's Note:

We welcome the inclusion of "A Packet of Packet", the new Packet Radio column in AR, and repeating Kevin Olds' appeal "... for the column to be a success, I will need feedback from you, the readers, to tell me what you think and what topics you would like to see covered in future columns. Without the feedback, the life of the column will be relatively short".

We all know that as amateur radio operators, whilst we are experts at radio communication, we really do leave a lot to be desired in the communication of our thoughts. Please prove me wrong, and give Kevin and this new column your full support ... VK3UV (Production Editor).

Help protect our frequencies — become an intruder watcher today

Join the fight for the future of amateur radio.

Join the WIA

The National Society for Australian Radio Amateurs

For more information, forward this coupon, or write to:

WIA FEDERAL OFFICE
PO BOX 300
CAULFIELD SOUTH
VIC 3162

Registered Address:
3/105 Hawthorn Road, Caulfied North, 3162

Please send a WIA information package to:

NAME:.....

ADDRESS:.....

.....

.....POSTCODE:.....

The Adelaide Telecommunication Museum — Future in Doubt

Lloyd Butler VK5BR
18 Ottawa Avenue
Panorama SA 5041

Even if you are only vaguely interested in the early history of radio and telecommunications and you haven't visited the Adelaide Telecommunication Museum, then you should have. Quite apart from its fine display of early telecommunication equipment, it houses what is well recognised as the finest display of vintage radio gear in the southern hemisphere and one of the best in the world. It is not only an asset to Adelaide but also a national asset.

The museum has a prime location in the heart of Adelaide. It is housed in an historical old telecommunications building called "Electra House" which was owned by Telecom and from the recent merger with OTC, is now owned by AOTC. It now seems that the museum must close because AOTC will sell the building.

The following feature article by well known journalist Des Colquhoun says it all. This article was published in the "Courier Messenger" of 12th August 1992, which is distributed to households throughout Adelaide.

"If only we could eat museums...

Hard times mean hard decisions. When money's short, there are heart-ripping decisions to be made on priorities for spending it.

As a community, we can't allow our children to starve or freeze while we spend money on art and sport.

Yet man does not live by bread alone; we are, after all, mankind and we need mankind's trappings to retain our humanity.

Any people who ignore their past don't have much future.

Ignore our mistakes and we are condemned to suffer them again.

Yet if people are hungry they want food before history, the sick need hospitals before art, the homeless rightly demand housing before museums.

And so one of Adelaide's — and the nation's — most endearing museums finds itself in jeopardy.

It's the Telecom Museum in Electra House in King William St.

It used to be run by Telecom as a corporate bit of national sentiment.

Now it's owned by AOTC, which a Government strapped for cash says must pay its deregulated way.

So AOTC intends to sell Electra House.

The building itself, said by some to worth only about $2.5 million because of heritage restrictions, is, thank God, safe from demolition.

And if you don't think that's important then take another look at it.

It's across the road from the Town Hall and really is an architectural one-off.

There could be no better place in the nation to house a communications museum.

It is the birthplace of the Overland Telegraph project, which magically linked Australia with Europe through Darwin in 1872.

Messages to the world were actually tapped out in the old building.

Today it is crammed with fascinating and precious junk, the stuff of our history, the gear that helped overcome the tyranny of distance in our vast and remote homeland.

It is material that would be thrown out only by a Philistine. AOTC intends to store it or find another museum to take it.

But the volunteers who created and run the museum are devastated and have been seeking help from Federal and State governments and the Adelaide City Council.

They have nurtured it lovingly on our behalf.

The ghosts of Traeger of the pedal wireless and of Flynn of the Inland walk the museum's rooms along with those of Marconi and the Flying Doctors.

I'd love to see it stay; we can't, even in hard times, allow every decision to be made only on the grounds of finance and efficiency.

Seeing it's a museum of communications, you'd think AOTC could talk seriously to itself and work something out, wouldn't you?

— Des Colquhoun"

(Editor's note: Also we have received from the VK5 Division copies of correspondence between Museum staff, AOTC management, and the Division, from which it is apparent that many people are strongly opposed to the threatened closure of the museum ... VK3ABP.)

Support the WIA in order to protect amateur radio frequencies

ALARA

Robyn Gladwin VK3ENX PO Box 438 Chelsea Vic 3196

ALARA Contest

The ALARA Contest will be held on Saturday, 14th November, 1992. All radio amateurs, YLs and OMs, are invited to take part.

Eligibility: All licensed operators throughout the world are invited to participate. Also open to SWLs.

Object: Participation: YL works everyone, OM works YLs only. One contest (combined phone and CW) run over 24 hours.

Starts: Saturday 14 November 1992 at 0001 hours UTC.

Ends: Saturday 14 November 1992 at 2359 hours UTC.

Suggested frequencies: Bands to be used are 3.5, 7, 14, 21 and 28 MHz only. The following are suggested frequencies for easier location of contacts:

28.380 to 28.410
21.190 to 21.200:21.380 to 21.410
14.250 to 14.280
7.070 to 7.100
3.560 to 3.590

Operation: Phone and CW operation. Each station may be counted twice on each band for credit — once on phone and once on CW. All contacts must be made in accordance with operator and station licence regulations. No net or list operation, no crossmode.

Procedure: Phone: call "CQ ALARA CONTEST"
CW: YLs call "CQ TEST ALARA"
OMs call "CQ YL"

Exchanges: ALARA member: RS or RST, serial no starting at 001, ALARA member, name.

YL non-member: RS or RST, serial no starting at 001, or OM name.

Scoring:
Phone:
5 points for ALARA member contacted
4 points for YL non-member contacted
3 points for OM contacted

CW:
Contacts where at least one operator is novice class count double points, otherwise same as phone.

SWL:
5 points for ALARA member logged
4 points for YL non-member logged

Logs:
Single log entry (but Australian YL novices entering for the Mrs Florence McKenzie CW trophy should indicate their CW score separately also). Logs must show date/time UTC, band, mode, callsign worked, report and serial number sent, report and serial number received, name of operator of station worked, and points claimed.

Logs Must be Signed

Logs also to show full name, callsign and address of operator, and show final score (points claimed). Logs must be legible. No carbon copies. No logs will be returned. Decision of the contest manager will be final. Logs must be received by the contest manager by 31 December 1992.

Contest manager:
Mrs Marilyn Syme VK3DMS
PO Box 91
IRYMPLE VICTORIA
AUSTRALIA 3498

Mrs Florence McKenzie CW Trophy:

This will be awarded to the Australian YL novice operator with the highest CW score (not necessarily an ALARA member). Minimum score 50 points.

The actual trophy, because of the size and weight, will not be forwarded to the winner, but a certificate bearing a photo depicting the trophy will be sent to the winner each year.

Certificates will be awarded for the following:

Top score overall
Top score phone only
Top score Australian YL novice CW (Mrs F McKenzie cert)
Top score ALARA member in each country and VK call area
Top score YL non-member in each continent
Top score OM in each continent
Top score SWL in each continent
Top score VK novice
Top score overseas YL novice CW

Trophies will be awarded to the following:
Top scoring Australian YL
Top scoring DX YL

(Mrs Florence Violet McKenzie, 1892-1982, was the first woman in Australia to take out a transmitting licence, in 1921. She passed the Amateur Operator's Certificate of Proficiency in 1925 and obtained the callsign 2GA (later VK2FV). Mrs Mac taught morse code to thousands of people, particularly service personnel during the 1939-45 war years. In 1984, the Townsville Amateur Radio Club kindly donated a trophy in her memory.

RD Contest

Many YLs participated in the Remembrance Day Contest, adding valuable points to their respective divisions.

New Members

Our new members for this month are Elizabeth Carter and Beryl Bennett from VK5.

"Elizabeth (Liz) Carter VK3EJC"

Liz began studying the amateur radio course in February, 1990, with the W.I.A. When her husband changed from driving a conventional sedan to a 4 wheel drive with CB installed, radio began to fascinate her.

The challenge came when an acquaintance on CB excused himself by saying: "I know this will be beyond your understanding ..." Now, 18 months later, Liz has a full call and one quite proud husband who has no desire to "get hooked" — his hobby is fishing.

Sample Log

Date/Time UTC	Band MHz	Mode	Callsign	RS(T) & Serial No sent	RS (T) & Serial No sent	Name	Points
14/11							
0135	28	SSB	VK6DE	59001	58028	Bev	5
0141	21	CW	VK3KS	599002	599045	Mavis	5
0600	14	SSB	FK8FA	59025	59011	Aimee	5
1100	3.5	CW	VK2PXS	599129	599004	Bobbie	10

"Beryl Bennett (VK5)"

Beryl has 4 married daughters and 10 grandchildren. She has lived in the interesting world of medicine, including 12 years in General Practice in the country. She was introduced to amateur radio by Mrs Val von Holt, who lives in Hawaii and has had her radio licence for 30 years. Last year, she brought her radio to Australia when she visited Beryl, and went "on air" every time they went out in the car. Beryl is looking forward to another visit from Val later this year.

Luncheons

The VK5 luncheons continue to be held in Adelaide on the second Friday of each month at 12 noon local time. The next one will be on 9th October. Members and guests meet at the Myer Centre, just inside the North Terrace entrance. Not only are these gatherings an opportunity for VK5s to meet together, they also provide a chance to welcome interstate and overseas visitors.

VK3 members are hoping that their luncheon programme, to be held on the first Friday at 11.30 a.m. in the first floor lounge, Victoria Hotel, 215 Little Collins Street, Melbourne, will be equally successful.

1991 ALARAMEET

Preparations are well under way for the 1993 ALARAMEET, to be held in Castlemaine, central Victoria, from 1st to 3rd October. The Convener is Margaret Loft, VK3DML, and she already has a list of 25 names on a "possible attendance" list and some are DX members.

Definite visitors are Aola, ZL1ALE and Dave, ZL1AMN, controller of the DX YL Net.

Speaking of the DX YL Net, this is an excellent opportunity for YLs to "work the world". Dave gives priority to YL callers but also arranges unusual OM contacts. Meralda, VR6MW, on Pitcairn Island, came up on this net earlier this year. The net is conducted every Monday on 14.222 MHz at 0600z.

A Call to all Holders of a Novice Licence

Now you have joined the ranks of amateur radio, why not extend your activities?

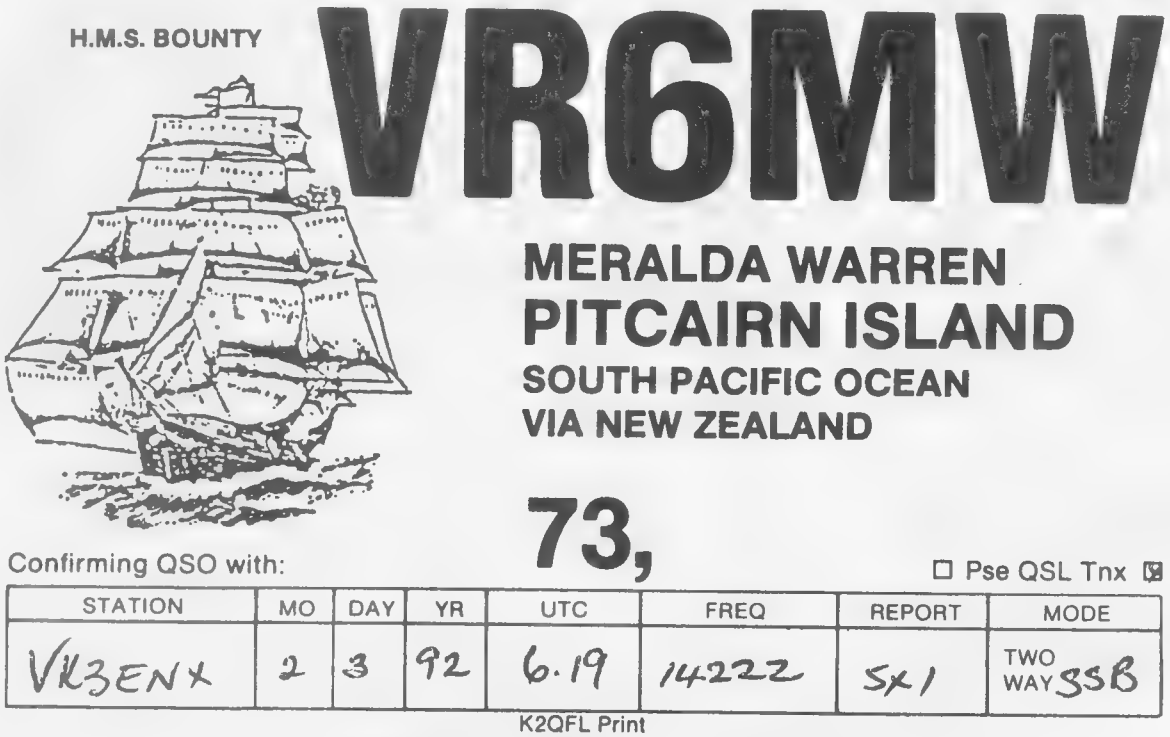
The Wireless Institute of Australia (NSW Division) conducts a Bridging Correspondence Course for the AOCP and LAOCP Examinations.

Throughout the Course, your papers are checked and commented upon to lead you to a successful conclusion.

For further details write to:

The Course Supervisor
WIA
PO Box 1066
Parramatta NSW 2124
(109 Wigram Street, Paramatta)
Phone: (02) 689 2417
Fax: (02) 633 1525

11am to 2pm Monday to Friday
7 to 9pm Wednesday



"The QSL from VR6MW — Pitcairn Island"

AMSAT Australia

Bill Magnusson VK3JT 359 Williamstown Rd Yarraville VIC 3013
Packet: VK3JT@VK3BBS

National co-ordinator
Graham Ratcliff VK5AGR
Packet: VK5AGR@VK5WI
Please take note of the AMSAT information nets:
AMSAT Australia net:
Control station VK5AGR
Check-ins commence at 0945Z on Sunday nights Bulletin commences at 1000Z
Frequencies:
Primary 7.064 MHz. plus/minus 5 kHz, Secondary 3.685 MHz.
AMSAT South West Pacific net:
2200Z Saturday on 14.282 MHz.

Experienced satellite users and newcomers alike are welcome on the nets. A large body of experience is on hand to answer queries. Listen to the WIA divisional broadcasts for regular up to date AMSAT information.

AMSAT Australia newsletter and software service:
Satellite users whether experienced or newcomers will benefit by subscribing to the AMSAT Australia newsletter and software service. The newsletter is published monthly by Graham VK5AGR. Subscription is $25 for Australia, $30 for New Zealand and $35 for other countries by AIR MAIL. It is payable to AMSAT Australia addressed as follows:
AMSAT Australia
GPO Box 2141
Adelaide SA 5001

The newsletter provides up to date information on all current and planned amateur radio satellite activities. Graham also provides a first class soft-ware service for satellite users. New soft-ware is reviewed regularly in the newsletter.

Satellite gateway stations:

There are now 31 World-Wide Satellite Gateways serving you as of 1st August 1992. Please note that the operation has now almost completely switched to UO22. The following tables set out the details of those gateways known to be active. There were 2 other stations on this latest list but they are not yet operational so I have not included them this time.

The satellite gateway system can be accessed in a number of ways. I'll detail these in a future column. If you are in VHF packet range of one of these stations and the recipient of your message is also within such range of another gateway, you can exploit the system by lodging your mail directly to your local gateway station and address it "via satellite" specifying the destination gateway. Operators report fast turn around times and high reliability when using this system. You don't have to be in VHF range of a gateway to take advantage of the system as all gateways are connected into their local packet mail forwarding networks. Just about every new satellite from now on will have 9600 bps mail capability so the reliability of the overall system can only improve. This may well be where the future of amateur radio international packet mail forwarding lies.

KITSAT successfully launched.

The launch of the KITSAT package went according to plan and the commissioning is just about finished as I write this month's column. The Korean control station has been in charge and everything has gone smoothly. There was the usual confusion regarding keps in the early days. This is due to difficulty in identifying the various objects by radar ranging until they drift apart a bit. There still seems to be some confusion about just what to call the new bird. The main school of thought says KO-23 (Kitsat Oscar 23) and another uses the number 24 because (they claim) AO-23 rightly belongs to SARA. I thought this one had been resolved and laid to rest some time ago but it reared its head again recently. I hope someone with the authority to clear it up does so soon. It's been confusing enough trying to cope with the keps issue without this added complication. We can do without any more SARA episodes. Now I ask this

Call	@BBS	LOCATION	HIER ADDR.	Service Area
NORTH AMERICA				
KI6QE	KI6QE	Los Osos	#CENCA.CA.USA.NA	NOCAL CENCA OR WA ID NV AZ VE6,7,8
AA6QN	AA6QN	San Diego	#SOCA.CA.USA.NA	SOCA,MEX
NL7NC	KL7AA	Anchorage	#NAK.AK.USA.NA	AK
VE8DX	VE8DX	Baffin Is	#BAF.CAN.NA	Baffin Island only
WA0PTV	WA0PTV	Fredonia	#WNY.NY.USA.NA	NY NH RI VT MA ME VE1 2 3
KF4WQ	KF4WQ	Lumberton	#NCLBT.NC.USA.NA	NC,SC
W0SL	K0PFX	Manchester	.MO.USA.NA	KS,MO,IL,IA,TN,KY,AR
NU9H	WV9O	La Porte	#NWIN.IN.USA.NA	IN,IL,MI
NR3U	NR3U	Selinsgrove	#NCPA.PA.USA.NA	PA,NJ,OH,MD,VA
N0GIB	N0GIB	Sioux Falls	SD.USA.NA	ND WY NE MN MT UT WI VE4
W5ERO	W5ERO	Lubbock	#WTX.TX.USA.NA	TX,NM,OK
KG4TM	KG4TM	Guantanamo	.CUB.CAR.NA	Guantanamo,Caribbean
WH6AQ	WH6AQ	Honolulu	.HI.USA.OC	US Pac. Area Guam
W7LUS	W7LUS	Ft Lauderdale	.FL.USA.NA	FL GA Central America
KF5OJ	KF5OJ	Alexandria	.LA.USA.NA	LA AL
EUROPE				
ON4KVI	ON4KVI	Vielsalm	.BEL.EU	Western Europe
EI6EH	EI6EH	Kells	.IRE.EU	Ireland, Denmark
EA3RAC	EA3RAC	Barcelona	.EAGC.ESP.EU	Spain Portugal France Italy
OH6KG	OH6RDW	Karleby	.FIN.EU	Finland Sweden Norway
GB7LAN	GB7LAN	Lancaster	#16.GBR.EU	UK
SV8RV	SV8RV	Zakynthos	.GRC.EU	Eastern Europe USSR
OCEANIA				
ZL2AMD	ZL2AMD	Napier	.#40.NZL.OC	New Zealand
VK5ZK	VK5ZK	Adelaide	.SA.AUS.OC	VK5, VK6
VK8SO	VK8SO	Alice Springs	.NT.AUS.OC	Alice Springs
FO5LQ	FO5LQ	Tahiti	.TAH.OC	French Polynesia
VK3JAV	VK3JAV	Marnoo	.MARNOO.VIC.AUS.OC	VK3,VK2,VK7
VK4BBS	VK4BBS	Brisbane	.QLD.AUS.OC	VK4,VK1,VK8,PHL
MIDDLE EAST				
4X1AS	4X1RU	Tel Aviv	.ISR.MDLE	Israel
FAR EAST				
JA6FTL	JA6FTL	Kagoshima	.JNET6.JPN.AS	JA,DU,VS6,BV,YB
AFRICA				
ZS1ABM	ZS1ABM		.ZAF.AF	South Africa
SOUTH AMERICA				
LU8DYF	LU8DYF	Olivos	.OLIVOS.BA.ARG.SA	CX CP OA CE PY YV LU/LW

question sincerely and I would like to have an answer. Does anyone out there know of any reason why SARA should be considered to be an amateur radio satellite ? I know you can get a QSL card if you send in a report but then Radio Australia QSLs. Maybe I'm getting a bit touchy.

To finish on a bright note, it would seem from all reports that KITSAT is performing very well under test and we can look forward to a long period of excellent service from this satellite when it is released for general use. It came from the UoSAT stable and if their past record is any indication it should be a beauty. UoSAT-2 is still fulfilling its amateur radio and educational roles perfectly. It was launched in March 1984. Indications are that it has many years of useful life left. An aging satellite can be a valuable (perhaps the best) source of technical data on satellite longevity and as such the telemetry from UoSAT-2 will continue to be studied closely over the coming years.

New G3RUH data demodulator:

As announced last month James Miller has come up with an updated version of his well proven and popular 400 bps PSK telemetry demodulator for OSCARS (10), 13 and phase 3D. He has incorporated many features from a long "wish list" and from all accounts this new model has no bugs and requires no adjustments or set up procedures. It is a "switch on and go" model. The demodulator can only be purchased directly from James. This is to ensure that the 50% pledged to AMSAT Phase 3D project is maximised. Cost is 27 pounds Sterling for the bare board and instructions and 99 pounds Sterling for the complete board, made up and tested. James may be contacted at; James Miller G3RUH, 3 Benny's Way, Coton, Cambridge, CB3 7PS, England.

New Russian RS amateur radio satellite:

Launch of the new amateur satellite RS-15 is planned for early 1993.

The orbit of the spacecraft is described as being near circular and polar with a height 2300 km and inclination of 67 degrees. There must be a mistake here, it can either have a near polar orbit OR it can have an inclination of 67 degrees, it can't have both. We will have to await clarification. The weight of the satellite is 70 kg. The satellite RS-15 will carry the radiotechnical complex "BRTK-11", designed in the Laboratory of Space Technology associated with the Tziolkowskii Museum of Cosmonautics in Kaluga, under the leadership of Papkov A.P. (UA3XWU), club station RS3X.

BRTK-11 consists of a linear transponder with two beacons, a bulletin board with 2 MB of memory and a command telemetry system of 64 parameters.

Working frequencies of BRTK-11 will be as follows:
Uplink passband: 145.857 MHz to 145.897 MHz
Downlink passband: 29.357 MHz to 29.397 MHz
Beacon 1: 29.398 MHz
Beacon 2: 29.353 MHz

The transponder output power is 5 watts, while the beacons will run between 0.4 watts and 1.2 watts. Antennas are 1/4 wave monopoles. The Laboratory of Aerocosmical Technics belonging to the Russian Defence and the Technical Sports Organisation (ROSTO) have helped in the co-ordination of the satellite launch and operation. The laboratory is headed by Yamnikov V.S., and control station RS3A. The public relations are conducted by Dr. Alexander Zaitzev (RW3DZ). Any organisations or persons who are interested in the experimental work of RS-15 should contact with Mr V Yamnikov at:

Laboratory of Aerocosmical Technics, ROSTO,
ul. Zemlynoi Wal 46/48,
Moscow 103 064 , RUSSIA
or through e-mail : rw3dz@rw3dz.public.su
for A. Zaitzev.

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amateur radio action

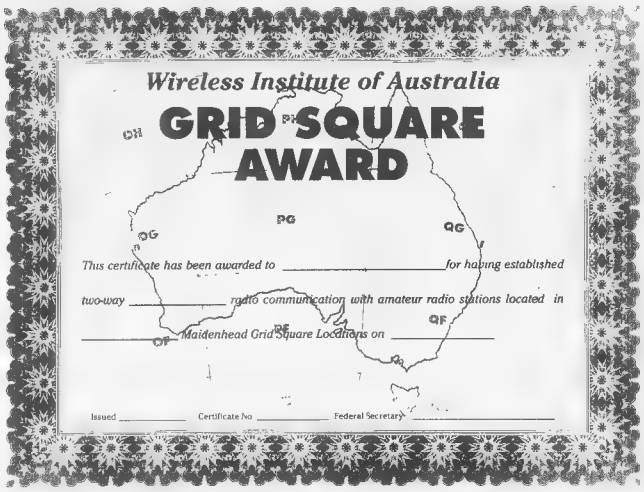
"House advertisement for Amateur Radio Action magazine at the appear in AIA journal Amateur Radio"

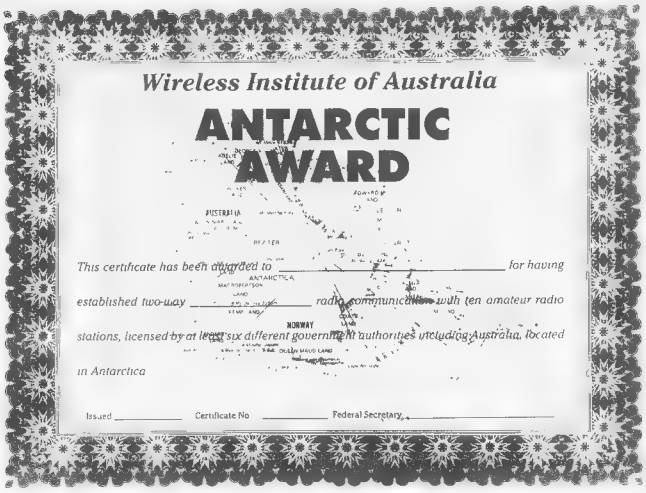
For subscription details to just about anywhere, phone Grant Manson on (03) 601 4222

If all this looks Greek to you, perhaps it's because you're not reading the authoritative source — Amateur Radio Action magazine... at your local news outlet every fourth Tuesday.

AWARDS

John Kelleher VK3DP — Federal Awards Manager





August celebrates my first 12 months as Federal Awards Manager. During that time I gradually overcame obvious teething troubles, including a run-in with a certain high-profile amateur. But the good greatly outweighed the bad. I feel that I have made many friends, due mainly to my personal approach, and a helping hand, ready to sort out any problems for my eager correspondents.

One fact was obvious. the quest for awards goes on unabated, regardless of the opinions of some that it is only a "paper-hanging" venture, designed to patch up cracks in the shack walls.

To prove my point, here are some statistics for the aforementioned 12 months — Awards issued —

WAVKCA	—	HF	—	125	
WAVKCA	—	VHF	—	3	
HAVKCA	—	HF	—	8	
WAC	—	HF	—	9	
WAC	—	VHF	—	3	
WAC	—	(SAT)	—	—	1
WAS	—	HF	—	1	
WIA GRID SQ	—	HF	—		2
WIA GRID SQ	—	VHF	—		1
WIA GRID SQ	—	UHF	—		1
WIA 80		—	—	—	9
DXCC	—	SSB	—	21	
DXCC	—	CW	—	7	
DXCC	—	OPEN	—	8	
DXCC	—	RTTY	—	1	

The issue of some awards is still in abeyance due to irregularities in applications, wrong formats and fees for overseas awards, which seem to be changing each year.

Remember, if you want an overseas award, and the country concerned is an IARU-affiliated country, then I can help you.

My congratulations to those VK stations who have received awards during my tenure — it was a pleasure.

Continuing with inexpensive and worthwhile overseas awards, I can recommend the OHA Award from the Finnish IARU Society — The basic OHA award requires that you work 15 OH stations in at least five call areas — then follows -

OHA 100-100 OH stations in all 10 call areas using at least two bands.
OHA 300 — work 300 OH stations
OHA 500 — work 500 OH stations
OHA 600 — work 600 OH stations

All contacts must be made with fixed stations after 6 June 1947 (after 1 February 1967 for OHA 500).

Do not send QSLs, send a list of QSOs checked by two amateurs, or the Awards Manager of your national amateur radio society.

The list must include the callsign, date, time (UTC), band mode, and report for each contact.

The fee for this award is 18 IRC or US$2.00.

Contact Jukka Kovanen, OH3GZ, SRAL Awards Manager, Varuskunta 47 AS 11, SF-11310, Riihimaki 31, Finland.
Or
Your friendly Federal Awards Manager

As a matter of policy, control of DXCC files must be regulated, and a firm base established. To this end, I must announce that any or all files which have not been activated or added to since December 1987 will be transferred to the inactive list, in December 1992. So, if you have any countries to add to your list, do so now. this announcement naturally excludes those operators who work hard to add to their standings.

In conclusion, I again appeal to clubs and organisations which run Award nets to keep me informed of your progress, and to provide me with publishable information to further your efforts. If you need publicity for your cause, I am here to help.

Sign up a new WIA member today — use the form on the reverse side of the AR address flysheet.

Education Notes

Brenda M Edmonds VK3KT WIA Federal Education Co-ordinator

The RAE Manual is the successor to the Examination manual, which has been published by the RSGB for many years. The copy which I have recently examined is the 12th edition, dated 1988, but overprinted "Also valid for 1992 Examinations". About the size of a standard exercise book, the manual has about 100 pages divided into 13 chapters, plus appendices with circuit symbols, mathematics and syllabus outline.

In content it is a fairly straightforward coverage of the syllabus for the amateur examinations run by the City and Guilds of the London Institute, the only body authorised to conduct amateur radio examinations in Britain. (Examinations under the auspices of this body are held at sites throughout the country twice yearly.)

A sign of growth is that, whereas the Examination manual from about Edition 8 on included sample multi-choice questions after each chapter, this edition has only two sample examinations at the end of the book. However, it has a companion volume, "How to pass the RAE", which comprises a dozen pages of examination information, mathematical processes and hints on multi choice questions followed by nine sample examinations. Each examination consists of two separate papers, — 45 questions on licensing conditions, interference and electromagnetic compatability, and 55 questions on operating practices, procedures and theory. To my mind, there is a case for a collection of questions at the end of each chapter as an aid to self testing.

The RAE syllabus puts more emphasis on practical aspects of running a station than does the Australian syllabus. One chapter in the manual is devoted to transmitter interference, one to EMC, and one to operating practices. This latter chapter includes the Q Code, the RST code, the phonetic alphabet, lists of common CW abbreviations, band plans, and hints on working through repeaters or satellites. Questions on all these topics are found in the sample papers.

The radio theory is well explained, with plenty of simple, clear diagrams. Where calculations occur, the procedures are clearly detailed step by step. The chapter on Safety, although short, gives a range of useful hints for both base and mobile operation. Overall the level of theory covered is above that required for an AOCP candidate, but it would be a useful study book for either NAOCP or AOCP so long as the student remembers that it has been produced for British conditions. The sample examinations are useful for self-assessment, but could not be used as trials because of the incompatability with the Australian layouts.

The companion volume, "How to pass the RAE" would be useful for the student who enjoys reading multi-choice questions. Because many do not relate to the Australian syllabus, the answers are not always obvious, and the papers could not be used as set for self evaluation. However, as a source of possible questions for group discussion or to throw to a class it would be ideal. A lot could be learnt by students trying to convert the questions to the local equivalent, and the operating questions are ones which should be considered before any new licensee takes to the air.

My thanks to Stewart Electronics for providing these copies for inspection.

RAE Manual, 12th Edition, RRP $31-00
How to pass the RAE, 2nd Edition, RRP $31-00

nr

Club Corner

Special Amateur TV-CB Broadcast

Melbourne's Omega Radio Club celebrated the 12th birthday of its fortnightly CB UHF broadcast by televising it through the Melbourne ATV repeater.

The program was widely seen throughout the greater Melbourne area and lasted one hour and 15 minutes. It sparked an interest in watching ATV among CB operators.

The Omega Radio Club, often described as Australia's premier CB club, has quite a few active radio amateurs among its members. The club's activities include foxhunting on UHF CB, and use of a portable UHF repeater at community events.

The ATV-CB broadcast through the VK3RTV repeater on 2 September this year had as guest speaker Phillip Portelli VK3AWG of the RAAF-Williams Radio Club. He talked about the history of the repeater and discussed the general aspects of amateur television.

His club is involved in ATV and has set up a studio at the RAAF Air Base, Laverton. Phillip told viewers and listeners to the Omega broadcast they did not have to spend thousands of dollars to get involved in ATV. He advised that anyone can watch the transmissions through VK3RTV, and it was not costly for radio amateurs to transmit in the mode.

The broadcast moderator Alex VK3XLI interviewed Phillip to draw him out on his knowledge. David VK3JDA operated a Sony vision mixer, and generated the call-sign announcements using a computer. The broadcast's newsreader Barry VK3JBR also doubled as the audio operator.

The regular Omega Radio Club broadcast heard on alternate Wednesday nights is a focal point for CB radio in Melbourne. Its normal format is to have a guest speaker, news announcements of interest to CB operators and hobby listeners, followed by a series of callback or "breaker" sessions.

The added element this time was ATV. During the broadcast a lot of CBers tried to adjust their domestic TV sets and antennas to receive the picture, and had some success.

One was located at Hoppers Crossing in Melbourne's south-west and 60 km from the VK3RTV site on Mt Dandenong. He was having trouble with reception, but experimented by using two VCRs as pre-amplifiers and then had a good picture.

A lot of CBers showed considerable interest and expressed disappointment that they could not get a picture. They asked questions about antenna dimensions and where to point for the repeater.

Those who missed getting a picture during the broadcast were told later one would be put up on their request, when they were ready to test reception. The Omega Radio Club is also hoping to hold another ATV-CB broadcast.

During a callback session on the Melbourne ATV liaison frequency on two metres, there was considerable favourable comment from radio amateurs who watched the transmissions. Most had heard news that the event was planned through an announcement on the VK3BWI WIA Victoria Sunday broadcast.

Custodian of VK3RTV, Peter VK3BFG, was complimentary of the club's efforts and said there should be further similar use made of the repeater by the club.

Barry Robinson VK3JBR

YAESU

OPEN DAY!

Saturday 7th November 1992 Only

Huge Savings On Ex-Demo Gear!

OFFICIAL LAUNCH - The New Yaesu FT-890 HF mobile transceiver and FT-415 2m handheld will be on diplay, with a sneak preview of the new FT-2400H 2m MIL-SPEC mobile transceiver.

Lucky Door Prizes

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- Display of C.A.T. (Computer Aided Transceiver) software for the FT-990 and FT-1000.
- Qualified Amateur Staff for advice and assistance
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- Light refreshments available
- See our range of Digitor - Plus IBM compatible computers.
- Don't miss the sensational savings, on a range of consumer and enthusiast products, at our Head Office Showroom ONE DAY SALE. (It's on the same day!)
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The easy way to save! Just phone us on our special One Day Only toll-free number between 9am and 4pm (Sydney time). We'll quote you our Open Day Special Price on new or ex-demo equipment. Simply quote your credit card number and we'll forward your purchase promptly to you.(Post and packaging extra)

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THE SENSATIONAL YAESU FT-990 HF ALL-MODE TRANSCEIVER

Take a quick look at the all-new FT-990 and you'll soon see the similarity to the top-of-the-line FT-1000. The incredible FT-990 embodies many of the advanced features and ease of operation of the FT-1000, but in a more compact, economical package that sports several new advances in both transmitter and receiver design.

Cat D-3260

BONUS SELECTION

Your choice of Yaesu MD-1 deluxe microphone (D-2125, valued at $199), or Revex W502 H.F. PEP wattmeter (D-1360, valued at $199)

Offer extended to 31st October 1992

2 Year Warranty!

AC Version $3495

NEW!

12V DC version FT-990 coming soon!

Cat D-3255

Designed For Easy Operation

Just like the FT-1000, Yaesu have designed the FT-990 to be as easy as possible to operate. The front panel layout puts all frequently used controls right where they should be...at your fingertips. All controls are clearly labelled and the digital display provides an abundance of information in an uncluttered and easy to read format. The front panel keypad offers one-touch band selection (160m - 10m) with 2 independant VFOs per band and 90 memories that store the operating data held in both VFOs. You can't help but appreciate the large back-lit analogue meter rather than those confusing bar-graph meters found on other transceivers.

Unique Features

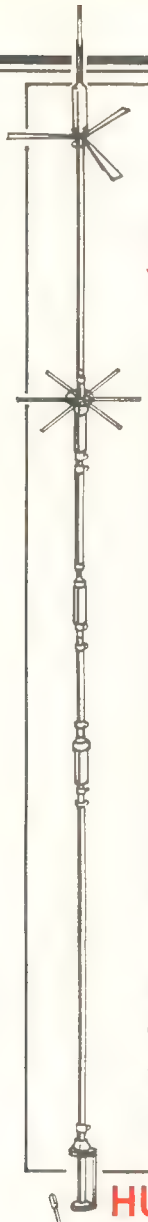
- Customizable RF Speech Processor - Yaesu's unique Frequency Shifted Processor (FSP) lets you shift the IF passband of your transmitted SSB signal to provide maximum punch with your voice/microphone combination.
- Digital Audio Filtering - Razor sharp audio filtering is available for tough SSB and CW reception conditions through the use of an astounding dual digital Switched Capacitance Filter (SCF) with independently adjustable selectivity skirts.
- Packet/RTTY - Separate interface jacks for RTTY and a Packet TNC are provided, while the mode selection buttons disable the mic automatically in the digital modes.

Direct Digital Synthesis (DDS)

Two 10-bit DDS and a magnetic rotary encoder provide silky-smooth VFO tuning, pure local oscillator signals, and very fast Tx/Rx change-over... and that's very important for QSK CW and digital modes. The DDS is teamed with an extremely low-noise, high performance receiver front-end using a PIN-diode controlled push-pull RF amplifier followed by a quad-FET ring mixer. The result is a very wide receiver dynamic range from 100kHz to 30MHz. Transmitter signal purity is also enhanced, with circuit noise nearly 90dB down from the carrier.

Convenience Features

- A highly efficient AC power supply is built-in. It allows high duty-cycle transmission while keeping the weight low, saving space and the added expense of external power supplies.
- An in-built Automatic Antenna Tuner with 39 memories.
- Effective interface rejection is facilitated by IF Shift, IF Notch, IF bandwidth and SCF audio controls.
- An adjustable noise blanker, a 500Hz B/W IF crystal filter and a comprehensive, easy to read user manual are also supplied.



HUSTLER

HF 5 BAND TRAP VERTICAL ANTENNA

The Hustler tradition continues! The 5BTV is yet another masterpiece from the people who have been making antennas for over 33 years. This rugged 5 band HF trap vertical uses Hustler's exclusive trap design (25mm solid fibreglass formers, high-tolerance trap covers and low loss windings), for accurate trap resonance with 1KW PEP power handling. Wideband coverage is provided on the 10, 15, 20 and 40m bands (SWR typically 1.15:1 at resonance, less than 2:1 SWR at band edges), with 80kHz bandwidth typical on 80m at less then 2:1 SWR. An optional 30m band resonator kit can also be installed without affecting operation of the other bands.

High strength aluminium tubing and a 4mm (wall thickness) extra heavy-duty base section provides optimum mechanical stability. What's more, stainless steel clamps and hardware guarantee a longer life. At just 7.65m, the 5BTV can be ground mounted (with or without radials, although radials are recommended), or it can be mounted in an elevated position with a radial system. Unlike other antenna designs the 5BTV can be fed with any length of 50 ohm coax cable

Cat D-4920

$299

30m Resonator Kit

Adds 30m coverage and includes all hardware. Cat D-4921 **$79.95**

VRK-1 Radial Kit

Provides a ground-plane for above ground mounting Cat D-4922 **$59.95**

SAVE $10

DIAMOND D-130J DISCONE ANTENNA

This quality Japanese discone antenna covers the frequency range 25-1300MHz, and was designed to be easy to assemble and install. The extensive use of stainless steel in the D-130J makes it very durable, while allowing transmission on the 6m, 2m, 70cm and 23cm bands with a maximum power rating of 200W PEP. Comes complete with mast mounting hardware, stainless steel U-bolts and instructions.

Cat D-4840

OUR BEST EVER PRICE $149

ST-7500 2m/70cm MOBILE ANTENNA

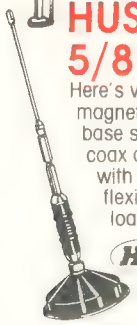
A high performance dualband antenna at a down to earth price! The ST-7500 is just 1 metre long and uses a ground independent design to provide high gain (3dB on 2m, 5.5dB on 70cm) with a maximum power rating of 150W. Quality construction plus a tiltable whip structure makes it especially ideal for the discerning mobile operator. Requires SO-239 antenna base (D-4035 recommended) Cat D-4810

BRAINER **$79.95**

HUSTLER UGM ¼ WAVE MAGNETIC ANTENNA

A great idea for extending the range of handheld transceivers! The Hustler UGM is a compact ¼ wave magnetic mount mobile antenna supplied with 2.1m of mini coax fitted with a BNC plug. Simply use the supplied frequency chart to cut the flexible stainless steel radiator to the required length for your application (within the 140-500MHz range) and its ready to use. The high efficiency magnetic mount assembly is triple chrome plated for long life, and is provided with a protective mylar cover to prevent scratching your cars roof.

Cat D-4802 **$39.95**



HUSTLER RX-2 2m 5/8 WAVE MOBILE

Here's value! A quality USA made 2m ⅝ wave magnetic mount antenna for mobile or temporary base station use. Comes complete with 4.5m of coax cable with a PL259 attached. It has 3dB gain with a power rating of 100W maximum and a flexible stainless steel radiator to minimise wind loading.

HUSTLER Cat D-4805 **$49.95**

DICK SMITH ELECTRONICS

For Mail Orders, information, or a Brochure, phone DS XPRESS on Sydney (02) 888 2105 or Outside Sydney (FREE CALL) 008 22 6610

Yaesu stocks are not held at all stores, but may be ordered. Please contact your local store for stock availability or phone (008) 22 6610 for details of your closest Ham Shack.

Or write to DS XPRESS, PO BOX 321 NORTH RYDE NSW 2113

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Moorabbin & District Radio Club

Valve Bank

Moorabbin and District Radio Club runs a Valve Bank which contains thousands of new and used receiving valves and a smaller quantity of transmitting valves such as 807s and 1625s etc at reasonable prices. Larger and high-powered transmitting valves are extremely scarce, but the range of receiving valves is quite extensive. It contains valves with 7 pin mini and 9 pin noval bases, octal bases and even the older types with 4, 5, 6 and 7 pin bases. there is a smattering of types with Mazda octal, Philips "P" bases, European 9 pin lock-in bases (EF-50s) etc. the stock is never static as more valves are received as donations from various amateurs, and also from deceased estates.

The Valve Bank was originally set up by Ron Higginbotham VK3RN (now a Silent Key) to help amateurs keep their older equipment in working order. Lately, the Valve Bank has been very popular with the increasingly large number of amateurs and other enthusiasts restoring vintage commercial broadcast radio sets. It is amazing the new lease of life that some of the old sets take on when fitted with a new valve or two. Even if the exact valve you require is not in stock, it may be possible to suggest a reasonable replacement.

The manager of the Valve Bank is Ken Bridger VK3JII, who can be contacted on the following telephone number, (03) 580 5347, at any reasonable time.

Perhaps some of you have seen Ken with his valve display board and sample stock of valves at some of the recent Hamfests. If you see Ken, come and look at the display and have a chat about old valves and old valve equipment.

If you write to Ken requesting information about availability of valves, prices, etc, please enclose a self-addressed envelope for reply.

The address is: Ken Bridger, 29 Elliott Street, Mordialloc, Vic 3195.

Hopefully he will be QTHR in the new 1993 Call Book.

By the way, if you have any old valves that you no longer need, don't dump them — call Ken, who can use them in the Valve Bank.

New Mailing Address

The mailing address of the club has been altered, please note that all future correspondence is to be addressed to:
The Secretary
Moorabbin and District Radio Club Inc
PO Box 58
Highett Vic 3190

Alan Doble VK3AMD

Caulfield District Scouts

Jamboree of the Air (JOTA)

Special event station VI3SAC will be on the air from 12th to 18th October 1992.

The Caulfield District Scouts are congratulating Radio Operators of JOTA on their 10th Anniversary with an A4 size Special Event Award.

Only one contact is required, and the station will be operating on all frequencies.

This is the first Special Event Callsign that we know of given to Scouts.

Kindly forward your QSL card and three postage stamps, or one IRC, to QSL Manager, C/- PO Box 71, Glenhuntly Vic 3163.

Shortwave listeners may apply for the Award by sending their QSL card, and an extract of their Log to the above address.

Garnet J Bowen VK3MTA (VK3SAC)
Caulfied District JOTA Co-ordinator

Bundaberg Experimenters Radio Group

Our group will be running a Special Event Station VI4RUM from 1st to 31st October 1992, to celebrate the 125th anniversary of the City of Bundaberg.

The station can be heard on the following frequencies; 3.570, 7.080, 14.210, 21.163, 28.475 and 28.570 MHz.

A special award and QSL card will be printed for the event, and the cost of the award to VK stations is (AUD)$5.00, and to others (USD)$5.00. The address for the event is PO Box 23 Bundaberg Qld 4670.

The station will also be taking part in Jamboree of the Air.

Ron Brumley
Secretary

Divisional Notes

VK2 Notes

Tim Mills VK2ZTM

Broadcast Time Change

On Sunday the 25th the morning session of the VK2WI broadcast will change to the new starting time of 10am (local) with the technical tape, followed by the news content at 10.15am. There is no change to the evening session which has the tape at 7.15pm and the news content at 7.30pm.

Some of the input to the recent forum provided comment as to the length of the broadcast, usually that it was too long. This question, as well as many other aspects of the broadcast presentation, is being reviewed by Richard VK2SKY who recently took over the broadcast preparation from Dave VK2KFU. It is difficult to tailor a broadcast to a set time since the submitted material differs each week, and each item is important to the group or person with that subject interest. Richard will be reporting changes in the broadcasts. Your input would be most welcome in writing to the Divisional office by mail or fax or packet to VK2WI at VK2RWI.

Broadcast items by cassette tape are most welcome. Please note the following basic requirements. Leave a quiet five-second pause before the item. Use an out cue followed by silence. Record on both tracks when using a stereo machine. Use a good quality tape.

Those 70 cm Noises

The two frequencies mentioned in last month's notes are using the French Syledis Radio positioning systems. The operating frequencies of these devices are in two groups, the lower band of 408 to 434 MHz, and the upper band 422 to 448 MHz. Ninety-nine percent of the energy should lie within a bandwidth of +/− 1.25 MHz. The modulation is PSK in a pseudo-random modulation code of 127 bits. Duration of each bit is 0.52 us, which repeat every 66.666 us. The pulse width with 80 code sequences takes 5.33 ms. The accuracy can be down to one metre with the transmission range up to the horizon. Even at over twice the horizon it is in the order of five to 20 metres. Standard operating range is about 100-150 km, which can double to 300 km with special antennas and amplifiers.

The normal operating frequencies for these devices is at 427 MHz, but the one which visited Sydney to assist in a survey of the ocean floor off Sydney's northern beaches had to be programmed to 432.98 MHz as the usual systems were not available in the required time periods. It has now

ceased operation. There may be a return of these systems in a year or so when a cable is to be brought ashore. The systems on 441 MHz have been DF'd to South Head in Sydney and the south coast near Kiama. Both appear to be operated by the Department of Defence as Radiolocation systems, which is the primary permitted mode for the 70 cm sub band 420 to 450 MHz.

New Members

Our usual warm welcome is extended to the following who joined the WIA via the NSW Division during August:

D M Brem	Assoc	North Ryde
S M Buck	VK2TOY	Collaroy
J L Christensen	VK2CAV	Albion Park
M Chylinski	Assoc	Winston Hills
E DeCelis	Assoc	Padstow Heights
R M Glass	VK2EGR	Baulkham Hills
W L Grindley	VK2WLG	Long Jetty
R Lorimer	Assoc	Tumbarumba
J W McCulloch	VK2CC	Saudi Arabia
B Markson	VK2TBM	Beverly Hills
J E May	Assoc	Collaroy
P J Mudie	VK2XZP	Berowa
B J O'Connor	VK2GTX	Northbridge
R B Poole	VK2DMJ	Kingscliff
C J Pratt	Assoc	Nelson Bay
M T Sedgwick	VK2XZW	Wetherill Park
P Semadeni	VK2GMN	Pyrmont
I L Weston	Assoc	Kingswood

New Callbooks

Stocks will be available from the Divisional office. Check the price structure elsewhere in this issue of "AR". Call in, phone, write or fax the office for your copy. Your local club may have arranged for a bulk purchase.

Final Exam

The final exam conducted by the Division will be held at Parramatta on Sunday 8 November; the closing date is 22 October.

Reminder

A reminder that registration and payments for the VK2 QSL Bureau are to be made through the office. Send only outgoing cards, sorted in sequence, to PO Box 1, Teralba NSW 2284. Only written enquiries can be made via the office as the management of the Bureau is external to the office.

Forum

This was held in the Parramatta Library on Saturday afternoon 29 August. By the end of the day the headcount had reached 40. there were 12 written submissions received. Several country members attended and their input was most welcome. Much of the discussion time was devoted to one-off problems or interests. the outcome will assist Divisional Council fine tune some of the services, or increase its workload, as the case may be.

A more detailed report will be given via the broadcasts and in these notes in a later issue.

5/8 Wave

Roland Bruce VK5OU

I returned from one of my country trips just in time for the August General Meeting of the Division, to hear the sad news that George Luxon, VK5RX, had died the previous week. George was one of our Honorary Life Members and will be greatly missed by many amateurs, especially the Old Timers, in South Australia and further afield.

It is not my intention to provide an obituary notice here, others knew George better than I, but I would like to pay my tribute to him. He was one of the first amateurs I met in S.A. (1971) when he held the position of QSL Bureau manager. In total he held it for over fifty years. Many will recall the DX News he contributed to the WIA weekly broadcast at that time. The meeting held a period of silence in his memory. Vale George.

October is a busy month for many amateurs. Besides those gearing up for the big DX contests, and others, like myself, who are hoping with the better weather to see to the antenna farm, there are those who involve themselves with JOTA, Jamboree of the Air.

The members of the scout and guide movements who experience amateur radio this way are usually very enthusiastic, they are a pleasure to know, and some of them may well be amateurs of the future. Peter Koen is the Project Commissioner, Scout Radio Activities and I am sure he would be pleased to hear from anyone wanting to lend a hand with JOTA over the weekend of October 17-18.

Even if you are not actively involved, remember that those JOTA stations you hear would like to make contact with you, and get to know about you and your shack. Peter's phone numbers are (08) 356 6990 (Bus), or (08) 353 9299 (A Hrs). Congratulations also to Peter (and Bob Dodd) who have been made Life Members of the Scout Association of Australia, presumably for services in the field of amateur radio.

New members: Trevor Cox; Tim Minchen, VK5NTM; Graham Smith and Les Williams. Welcome to the WIA gentlemen.

Diary: December 8. Christmas social. Woodville Community Centre.

1993 Buy and Sell Nights — January, May and August.

VK6 Notes

Harry Atkinson VK6WZ

In August and September those brave souls who rise in the dark to work low-band DX in the "DX window", have been having a ball with European and North American contacts in the hectic few minutes each side of dawn. Prominent among them is Robin VK6LK.

After only six months service, Nick VK6ND had to relinquish the Sunday broadcast, thanks to saltmine demands. Welcome to Glenn VK6ZGT and a small team of helpers.

Welcome too, to our new secretary, Tony Lumley VK6ZTL.

The enthusiastic team NCRG is putting the finishing touches to Hamfest 1992, and it promises to be bigger and better than any yet. Make a note of the date, Sunday, 1st November 1992.

Murphy's Corner

AR September, page 9, article "An Interference Cancelling System for your Receiver or Transceiver". The SW4 legend and RF Transformer information in Figure 5 (on Page 13) was omitted, and is as follows:-

SW4 Legend

A 21-28 MHz
B 14 MHz
C 7 MHz
D 3.5 MHz
E 1.8 MHz

RF Transformers (Refer Section A)

T1 — Short wave receiver aerial coil, slug tuned, secondary inductance approximately 4μH, turns ratio approx 1:4

T2, T3 — 8 turns tri-filar wound on an Amidon FT50-72 Toroidal Ferrite Core.

The author, Lloyd Butler VK5BR, also advises that he has devised a simpler method of Phase Shifting, which we will be publishing in the near future.

(Editor's Note: We extend apologies to our readers and to the author for this omission, and for the inconvenience caused — VK3ABP.)

BAYCOM MODEM and PROGRAM

1. The advertisers name should have read "Australian Amateur Packet Radio Association", and
2. The modem price (incl. manual) is only $190-00, and not as stated.

Remember to leave a three second break between covers when using a repeater

HF PREDICTIONS

Evan Jarman VK3ANI

The Tables Explained

The tables provide estimates of signal strength for each hour of the UTC day for the five bands from 14 to 28 MHz. The UTC hour is the first column; the second column lists the predicted MUF (maximum useable frequency); the third column the signal strength in dB relative to 1 μV (dBU) at the MUF; the fourth column lists the "frequency of optimum travail" (FOT), or the optimum working frequency as it is more generally known.

The signal strengths are all shown in dB relative to a reference of 1 μV in 50 Ohms at the receiver antenna input. The table below relates these figures to the amateur S-point "standard" where S9 is 50 μV at the receiver's input and the S-meter scale is 6 dB per S-point.

μV in 50 Ohms	S-points	dB(μV)
50.00	S9	34
25.00	S8	28
12.50	S7	22
6.25	S6	16
3.12	S5	10
1.56	S4	4
0.78	S3	2
0.39	S2	— 8
0.20	S1	—14

The tables are generated by the Graph_DX program, assuming 100 W transmitter power output, modest beam antennas (eg three element Yagi or cubical quad) and a short-term forecast of the sunspot number. Actual solar and geomagnetic activity will affect results observed.

The three regions cover stations within the following areas:

VK EAST The major part of NSW and Queensland.

VK SOUTH Southern-NSW, VK3, VK5 and VK7.

VK WEST The south-west of Western Australia.

Likewise, the overseas terminals cover substantial regions (eg "Europe" covers most of Western Europe and the UK).

The relevant sunspot numbers used to generate the predictions are:

May	94
June	88
July	81
August	77
September	72
October	68

A change in production methods caused the lack of predictions a few months ago. These methods are still under review but the format should continue to the end of the year.

If a particular format or path is preferred kindly advise us, in writing, at the WIA Federal Office, PO Box 300, Caulfield South Vic 3162.

VK East-Mediterranean

UTC	MUF	dBU	FOT	14.2	18.1	21.2	24.9
1	13.1	2	10.0	4	2	-4	-17
2	13.2	-2	10.0	0	0	-4	-15
3	17.7	2	13.3	-6	2	2	-2
4	24.5	6	18.8	-12	5	6	2
5	30.1	7	23.5	-16	0	7	8
6	30.4	8	27.6	-20	0	6	6
7	29.6	8	24.0	-19	0	7	9
8	28.4	8	22.8	-14	3	8	10
9	27.0	10	22.7	-6	7	11	11
10	25.4	12	20.2	3	12	14	12
11	23.9	14	19.0	13	18	17	13
12	22.5	17	17.9	21	22	19	13
13	21.7	20	17.2	29	26	21	13
14	20.7	23	16.7	32	28	22	13
15	19.7	25	16.4	35	28	21	16
16	18.7	25	15.7	36	28	21	10
17	18.6	26	14.6	36	27	18	6
18	17.7	27	13.8	36	26	16	3
19	16.3	28	12.6	34	22	11	-3
20	15.0	29	11.5	31	18	6	-10
21	15.7	28	12.0	32	20	8	-6
22	16.2	28	12.2	32	28	20	8
23	17.3	23	12.7	36	29	13	1
24	17.3	23	13.4	28	21	13	1
25	16.1	18	12.4	19	15	7	-4
24	15.6	12	12.0	12	9	3	-7

VK South-Mediterranean

UTC	MUF	dBU	FOT	14.2	18.1	21.2	24.9
1	13.4	7	10.3	7	3	-4	-17
2	13.4	0	10.2	2	1	-4	-16
3	18.1	4	14.3	-2	4	3	-1
4	25.5	7	19.6	-10	4	8	8
5	27.6	7	23.1	-17	1	6	8
6	27.4	6	22.6	-19	0	5	7
7	27.0	6	22.1	-19	-1	5	7
8	26.3	6	21.3	-17	0	6	7
9	25.2	7	20.1	-12	3	7	7
10	23.7	8	18.7	-4	7	9	7
11	21.7	11	17.2	6	12	11	7
12	20.0	14	15.8	14	15	12	5
13	18.4	18	14.6	23	19	15	3
14	17.4	22	13.9	30	21	12	0
15	16.5	25	13.0	31	20	10	-4
16	15.9	26	12.6	31	19	8	-7
17	15.4	27	12.0	31	18	6	-10
18	14.9	28	11.6	30	16	3	-14
19	14.2	28	10.9	28	13	0	-19
20	13.7	28	10.5	27	11	-2	-22
21	13.7	27	11.1	26	15	2	-15
22	14.5	25	11.1	31	22	13	0
23	15.2	21	11.3	25	19	12	1
24	16.3	16	12.6	17	13	6	-5

VK West-Mediterranean

UTC	MUF	dBU	FOT	14.2	18.1	21.2	24.9
1	12.2	13	9.4	11	0	-13	-33
2	12.3	5	9.3	6	-1	-13	-28
3	12.2	2	9.0	5	1	1	-8
4	20.6	6	15.0	3	8	9	6
5	22.9	8	17.6	0	9	9	6
6	26.9	8	20.4	-7	6	10	10
7	26.9	8	22.5	-10	4	8	9
8	26.8	7	22.2	-11	3	8	8
9	26.5	7	21.7	-11	4	8	8
10	25.9	8	21.0	-8	5	8	8
11	24.8	8	19.9	-4	7	10	8
12	23.5	10	18.8	5	12	12	8
13	21.6	13	17.2	12	16	12	8
14	21.2	15	17.4	14	16	14	8
15	20.3	17	16.2	23	21	16	7
16	19.2	21	15.2	31	24	16	5
17	18.3	23	14.5	33	24	15	2
18	17.5	24	13.9	33	23	12	-1
19	16.8	25	13.4	33	21	10	-5
20	16.0	26	13.2	32	19	7	-9
21	15.7	26	12.9	30	17	4	-13
22	15.4	27	12.1	28	15	-1	-21
23	14.7	27	11.1	28	12	-7	-28
24	14.1	27	10.8	27	12	-2	-22
25	16.1	26	12.5	31	16	8	-7
24	14.7	22	11.4	23	11	0	-17

VK East - Europe L/P

UTC	MUF	dBU	FOT	14.2	18.1	21.2	24.9
1	13.1	1	8.8	3	2	-3	-14
2	13.1	4	8.9	5	3	-4	-15
3	13.8	7	8.8	8	3	-5	-18
4	15.1	10	8.5	10	3	-7	-23
5	17.6	15	8.5	12	1	-11	-28
6	12.1	20	8.7	16	4	-9	-27
7	14.6	24	10.6	25	14	3	-12
8	18.4	22	13.4	30	23	15	4
9	16.4	20	12.6	23	18	11	1
10	16.0	14	12.2	13	12	7	-1
11	17.8	7	13.3	7	5	4	-2
12	18.0	1	13.3	-3	3	1	-4
13	17.4	-4	12.9	-8	0	-1	-6
14	14.8	-9	11.5	-11	-2	-2	-6
15	14.3	-13	11.0	-13	-3	-3	-7
16	13.5	-16	10.4	-13	-4	-3	-8
17	13.1	-18	10.0	-12	-3	-3	-8
18	12.0	-14	10.6	-14	-4	-3	-7
19	10.7	-7	13.1	-18	-4	-1	-4
20	20.0	0	13.6	-18	-3	0	0
21	17.2	-2	11.9	-12	-1	0	-3
22	15.7	-3	10.6	-7	0	0	-6
23	14.5	-2	9.7	-3	1	-1	-9
24	13.7	-1	9.2	0	2	-2	-11

VK South - Europe L/P

UTC	MUF	dBU	FOT	14.2	18.1	21.2	24.9
1	12.4	-2	8.5	1	0	-7	-19
2	12.3	1	8.5	4	0	-8	-21
3	11.9	5	8.2	6	0	-10	-26
4	11.2	9	8.1	8	-2	-12	-32
5	10.9	13	7.9	9	-4	-14	-44
6	11.4	18	8.3	12	-2	-17	-38
7	13.5	24	10.0	22	8	-5	-23
8	16.7	22	12.4	27	18	9	-4
9	18.4	21	12.8	28	21	14	4
10	15.3	18	11.7	19	13	5	-7
11	17.2	12	10.8	12	8	1	-10
12	15.0	6	10.3	5	5	0	-9
13	14.3	-1	10.0	-1	1	-2	-10
14	13.8	-7	9.5	-6	-1	-3	-10
15	13.3	-12	9.3	-9	-2	-4	-10
16	12.8	-17	9.1	-10	-3	-4	-10
17	12.6	-18	9.1	-10	-3	-4	-10
18	12.5	-16	9.9	-12	-3	-3	-8
19	12.7	-10	10.7	-18	-4	-2	-6
20	18.6	-4	13.0	-19	-4	-1	-2
21	16.4	-6	11.4	-14	-3	-2	-5
22	14.7	-8	10.2	-9	-2	-2	-8
23	13.7	-7	9.4	-5	-1	-4	-11
24	12.9	-5	8.9	-2	0	-5	-15

VK West - Europe L/P

UTC	MUF	dBU	FOT	14.2	18.1	21.2	24.9
1	12.0	-13	8.3	-5	-4	-9	-18
2	11.8	-9	8.3	-3	-2	-10	-29
3	11.5	-7	8.3	-3	-2	-11	-27
4	11.5	-7	8.5	-1	-4	-11	-24
5	11.0	-4	7.9	0	-5	-14	-30
6	10.5	-1	7.7	1	-7	-18	-35
7	12.8	11	9.6	10	1	-9	-25
8	15.8	14	11.8	16	10	2	-10
9	18.9	15	14.2	20	16	10	1
10	18.9	15	13.5	21	18	13	5
11	16.9	12	12.3	13	10	4	-5
12	14.7	6	11.3	6	5	0	-10
13	15.5	1	10.4	-1	2	-1	-9
14	14.8	-5	9.9	-7	-1	-3	-10
15	14.2	-11	9.7	-11	-4	-5	-11
16	13.6	-16	9.2	-13	-5	-6	-11
17	13.1	-18	9.0	-12	-6	-6	-11
18	13.1	-22	8.8	-13	-6	-6	-11
19	15.6	-25	8.8	-13	-5	-6	-12
20	13.3	-19	9.6	-15	-6	-6	-11
21	15.5	-13	10.3	-18	-6	-5	-8
22	14.2	-15	9.9	-14	-5	-6	-10
23	13.2	-15	9.2	-11	-5	-6	-13
24	12.7	-15	8.7	-8	-4	-7	-15

VK East - Africa

UTC	MUF	dBU	FOT 14.2	18.1	21.2	24.9
1	15.1	10	11.9	9	7	0
2	14.5	5	11.2	5	5	0
3	14.9	2	11.4	1	4	0
4	18.7	5	14.2	-3	4	0
5	23.7	6	17.4	-8	4	7
6	24.5	6	17.8	-9	3	6
7	24.5	6	17.8	-9	3	6
8	23.1	6	17.9	-7	4	6
9	21.8	7	17.6	-5	6	7
10	20.0	8	15.8	2	8	7
11	18.4	9	14.5	6	9	6
12	17.0	11	13.4	11	10	5
13	15.9	14	12.6	15	11	4
14	15.2	19	12.0	20	13	3
15	14.6	24	11.5	25	14	3
16	14.1	26	11.0	26	13	6
17	13.7	28	10.2	28	13	-1
18	13.6	28	9.5	28	10	-5
19	13.6	30	9.3	28	8	-7
20	13.3	29	9.0	26	10	-4
21	12.8	27	8.8	23	8	-7
22	12.3	21	8.6	17	4	-10
23	12.1	15	8.6	13	2	-10
24	13.0	11	9.4	11	4	-6

VK South - Africa

UTC	MUF	dBU	FOT 14.2	18.1	21.2	24.9
1	15.2	15	10.9	16	11	4
2	15.8	12	12.0	12	10	4
3	19.7	12	15.5	9	12	10
4	24.0	10	17.7	3	11	12
5	25.0	8	18.4	-1	9	10
6	25.1	8	18.3	-3	7	9
7	24.8	8	18.3	-3	7	9
8	24.3	8	17.3	-3	7	9
9	23.4	8	16.5	-1	8	9
10	22.1	9	15.5	3	10	10
11	20.3	10	14.1	8	12	9
12	18.4	12	12.8	12	12	8
13	16.9	14	11.7	16	12	6
14	15.6	18	10.7	20	13	4
15	14.8	23	10.2	25	12	3
16	14.2	25	9.5	26	14	6
17	13.5	26	9.5	26	11	-1
18	13.2	26	9.3	26	9	-3
19	13.3	26	9.3	25	9	-5
20	12.8	29	9.1	24	7	-8
21	13.6	28	9.5	26	11	-2
22	13.1	25	9.3	22	8	-6
23	13.0	20	9.3	18	6	-6
24	14.0	18	10.1	17	8	-2

VK West - Africa

UTC	MUF	dBU	FOT 14.2	18.1	21.2	24.9
1	14.1	19	10.7	19	10	0
2	15.1	16	11.6	16	11	3
3	19.0	14	15.0	14	15	11
4	24.4	11	18.9	9	15	12
5	25.2	10	19.2	3	13	13
6	25.8	9	19.2	3	16	13
7	25.5	9	21.4	0	10	12
8	25.4	8	21.0	-1	9	11
9	25.0	8	20.5	-1	9	11
10	24.4	9	19.7	0	9	11
11	23.3	9	18.6	3	11	11
12	21.9	11	18.6	8	13	12
13	20.2	13	15.9	14	15	11
14	18.5	15	17.6	19	16	10
15	17.1	16	13.8	22	16	9
16	17.0	22	13.5	24	18	7
17	16.3	24	15.7	28	18	5
18	15.3	26	12.0	29	17	5
19	14.7	27	11.6	29	15	2
20	14.2	29	11.1	29	14	0
21	13.7	29	10.7	28	12	-2
22	13.1	30	10.1	26	9	-6
23	12.7	30	9.7	25	8	-8
24	13.2	24	10.1	22	9	-4

VK East - Asia

UTC	MUF	dBU	FOT 14.2	18.1	21.2	24.9
1	31.3	14	25.9	11	20	22
2	32.2	13	24.7	10	19	22
3	32.7	13	25.2	9	16	22
4	35.0	12	27.2	10	20	22
5	35.7	14	28.8	12	21	22
6	31.9	15	25.9	16	23	24
7	30.7	15	24.8	21	26	26
8	29.5	17	24.8	30	31	29
9	28.3	19	22.6	39	36	32
10	26.9	20	21.4	41	37	32
11	25.8	21	20.6	43	37	31
12	25.2	21	20.0	43	37	30
13	27.1	22	19.1	42	36	28
14	23.7	23	18.1	43	36	27
15	21.0	23	16.5	41	34	26
16	19.6	24	13.3	39	28	19
17	17.7	25	13.8	36	23	12
18	15.7	26	12.1	31	16	2
19	15.3	26	11.8	30	14	-1
20	14.7	26	11.3	28	11	-5
21	20.2	20	16.0	33	25	17
22	28.5	16	22.2	37	28	26
23	30.8	15	24.7	40	35	25
24	30.9	14	25.1	15	22	23

VK South - Asia

UTC	MUF	dBU	FOT 14.2	18.1	21.2	24.9
1	25.1	12	20.4	7	15	15
2	25.2	11	20.9	5	13	17
3	25.2	11	21.2	2	13	14
4	25.3	11	21.3	4	13	14
5	25.1	12	21.1	5	13	14
6	24.7	12	20.8	6	14	15
7	24.1	13	20.3	9	16	15
8	23.0	15	19.5	14	18	17
9	21.7	20	18.4	20	21	18
10	20.1	21	17.2	33	27	21
11	18.6	22	15.6	35	27	18
12	17.3	25	14.7	37	24	14
13	16.5	27	13.9	33	20	8
14	16.5	27	13.0	33	18	4
15	15.1	27	12.4	36	18	4
16	14.5	25	11.4	30	15	0
17	14.0	25	10.9	28	12	-3
18	13.1	25	10.2	24	9	-7
19	12.5	26	9.6	21	0	-19
20	13.1	25	10.1	17	-5	-26
21	16.0	21	12.1	19	-2	-22
22	18.9	15	15.3	27	14	1
23	22.9	13	18.0	21	18	12
24	24.5	12	19.5	10	16	16

VK West - Asia

UTC	MUF	dBU	FOT 14.2	18.1	21.2	24.9
1	29.5	14	23.7	15	22	22
2	29.7	12	23.7	12	22	23
3	27.1	12	22.6	12	20	21
4	30.1	14	24.9	10	19	21
5	30.8	14	25.2	10	19	21
6	31.1	14	25.9	11	20	22
7	31.2	14	25.8	13	21	22
8	30.9	15	25.3	16	23	24
9	28.9	17	23.3	29	30	28
10	27.6	20	23.2	33	38	33
11	26.3	21	20.6	42	38	33
12	26.8	21	19.2	44	38	32
13	24.8	21	19.7	44	37	30
14	23.6	22	18.7	43	35	28
15	22.8	22	18.1	43	34	27
16	21.9	22	17.3	42	33	24
17	20.6	23	16.5	40	30	21
18	19.3	23	15.2	38	27	17
19	18.2	23	14.2	36	24	12
20	16.6	24	12.6	33	18	5
21	15.0	25	11.6	28	11	-5
22	14.6	24	11.2	22	8	-3
23	14.3	24	11.2	22	8	-3
24	14.3	21	11.3	22	12	2
25	14.5	19	11.1	25	15	12
26	15.3	16	11.9	25	22	16
27	16.5	15	12.9	25	23	20
28	17.8	14	14.1	24	23	20
29	18.9	13	15.1	23	23	20
30	19.9	13	16.1	22	23	20
31	20.8	13	17.0	22	23	20
32	21.6	13	17.8	22	23	20
33	22.3	13	18.5	22	23	20
34	22.9	13	19.1	22	23	20
35	23.4	13	19.6	22	23	20
36	23.8	13	20.0	22	23	20
37	24.1	13	20.3	22	23	20
38	24.3	13	20.5	22	23	20
39	24.4	13	20.6	22	23	20
40	24.5	13	20.7	22	23	20
41	24.5	13	20.7	22	23	20
42	24.5	13	20.7	22	23	20
43	24.4	13	20.6	22	23	20
44	24.3	13	20.5	22	23	20
45	24.2	13	20.4	22	23	20
46	24.1	13	20.3	22	23	20
47	24.0	13	20.2	22	23	20
48	23.9	13	20.1	22	23	20
49	23.8	13	20.0	22	23	20
50	23.7	13	19.9	22	23	20
51	23.6	13	19.8	22	23	20
52	23.5	13	19.7	22	23	20
53	23.4	13	19.6	22	23	20
54	23.3	13	19.5	22	23	20
55	23.2	13	19.4	22	23	20
56	23.1	13	19.3	22	23	20
57	23.0	13	19.2	22	23	20
58	22.9	13	19.1	22	23	20
59	22.8	13	19.0	22	23	20
60	22.7	13	18.9	22	23	20
61	22.6	13	18.8	22	23	20
62	22.5	13	18.7	22	23	20
63	22.4	13	18.6	22	23	20
64	22.3	13	18.5	22	23	20
65	22.2	13	18.4	22	23	20
66	22.1	13	18.3	22	23	20
67	22.0	13	18.2	22	23	20
68	21.9	13	18.1	22	23	20
69	21.8	13	18.0	22	23	20
70	21.7	13	17.9	22	23	20
71	21.6	13	17.8	22	23	20
72	21.5	13	17.7	22	23	20
73	21.4	13	17.6	22	23	20
74	21.3	13	17.5	22	23	20
75	21.2	13	17.4	22	23	20
76	21.1	13	17.3	22	23	20
77	21.0	13	17.2	22	23	20
78	20.9	13	17.1	22	23	20
79	20.8	13	17.0	22	23	20
80	20.7	13	16.9	22	23	20
81	20.6	13	16.8	22	23	20
82	20.5	13	16.7	22	23	20
83	20.4	13	16.6	22	23	20
84	20.3	13	16.5	22	23	20
85	20.2	13	16.4	22	23	20
86	20.1	13	16.3	22	23	20
87	20.0	13	16.2	22	23	20
88	19.9	13	16.1	22	23	20
89	19.8	13	16.0	22	23	20
90	19.7	13	15.9	22	23	20
91	19.6	13	15.8	22	23	20
92	19.5	13	15.7	22	23	20
93	19.4	13	15.6	22	23	20
94	19.3	13	15.5	22	23	20
95	19.2	13	15.4	22	23	20
96	19.1	13	15.3	22	23	20
97	19.0	13	15.2	22	23	20
98	18.9	13	15.1	22	23	20
99	18.8	13	15.0	22	23	20
100	18.7	13	14.9	22	23	20
101	18.6	13	14.8	22	23	20
102	18.5	13	14.7	22	23	20
103	18.4	13	14.6	22	23	20
104	18.3	13	14.5	22	23	20
105	18.2	13	14.4	22	23	20
106	18.1	13	14.3	22	23	20
107	18.0	13	14.2	22	23	20
108	17.9	13	14.1	22	23	20
109	17.8	13	14.0	22	23	20
110	17.7	13	13.9	22	23	20
111	17.6	13	13.8	22	23	20
112	17.5	13	13.7	22	23	20
113	17.4	13	13.6	22	23	20
114	17.3	13	13.5	22	23	20
115	17.2	13	13.4	22	23	20
116	17.1	13	13.3	22	23	20
117	17.0	13	13.2	22	23	20
118	16.9	13	13.1	22	23	20
119	16.8	13	13.0	22	23	20
120	16.7	13	12.9	22	23	20
121	16.6	13	12.8	22	23	20
122	16.5	13	12.7	22	23	20
123	16.4	13	12.6	22	23	20
124	16.3	13	12.5	22	23	20
125	16.2	13	12.4	22	23	20
126	16.1	13	12.3	22	23	20
127	16.0	13	12.2	22	23	20
128	15.9	13	12.1	22	23	20
129	15.8	13	12.0	22	23	20
130	15.7	13	11.9	22	23	20
131	15.6	13	11.8	22	23	20
132	15.5	13	11.7	22	23	20
133	15.4	13	11.6	22	23	20
134	15.3	13	11.5	22	23	20
135	15.2	13	11.4	22	23	20
136	15.1	13	11.3	22	23	20
137	15.0	13	11.2	22	23	20
138	14.9	13	11.1	22	23	20
139	14.8	13	11.0	22	23	20
140	14.7	13	10.9	22	23	20
141	14.6	13	10.8	22	23	20
142	14.5	13	10.7	22	23	20
143	14.4	13	10.6	22	23	20
144	14.3	13	10.5	22	23	20
145	14.2	13	10.4	22	23	20
146	14.1	13	10.3	22	23	20
147	14.0	13	10.2	22	23	20
148	13.9	13	10.1	22	23	20
149	13.8	13	10.0	22	23	20
150	13.7	13	9.9	22	23	20
151	13.6	13	9.8	22	23	20
152	13.5	13	9.7	22	23	20
153	13.4	13	9.6	22	23	20
154	13.3	13	9.5	22	23	20
155	13.2	13	9.4	22	23	20
156	13.1	13	9.3	22	23	20
157	13.0	13	9.2	22	23	20
158	12.9	13	9.1	22	23	20
159	12.8	13	9.0	22	23	20
160	12.7	13	8.9	22	23	20
161	12.6	13	8.8	22	23	20
162	12.5	13	8.7	22	23	20
163	12.4	13	8.6	22	23	20
164	12.3	13	8.5	22	23	20
165	12.2	13	8.4	22	23	20
166	12.1	13	8.3	22	23	20
167	12.0	13	8.2	22	23	20
168	11.9	13	8.1	22	23	20
169	11.8	13	8.0	22	23	20
170	11.7	13	7.9	22	23	20
171	11.6	13	7.8	22	23	20
172	11.5	13	7.7	22	23	20
173	11.4	13	7.6	22	23	20
174	11.3	13	7.5	22	23	20
175	11.2	13	7.4	22	23	20
176	11.1	13	7.3	22	23	20
177	11.0	13	7.2	22	23	20
178	10.9	13	7.1	22	23	20
179	10.8	13	7.0	22	23	20
180	10.7	13	6.9	22	23	20
181	10.6	13	6.8	22	23	20
182	10.5	13	6.7	22	23	20
183	10.4	13	6.6	22	23	20
184	10.3	13	6.5	22	23	20
185	10.2	13	6.4	22	23	20
186	10.1	13	6.3	22	23	20
187	10.0	13	6.2	22	23	20
188	9.9	13	6.1	22	23	20
189	9.8	13	6.0	22	23	20
190	9.7	13	5.9	22	23	20
191	9.6	13	5.8	22	23	20
192	9.5	13	5.7	22	23	20
193	9.4	13	5.6	22	23	20
194	9.3	13	5.5	22	23	20
195	9.2	13	5.4	22	23	20
196	9.1	13	5.3	22	23	20
197	9.0	13	5.2	22	23	20
198	8.9	13	5.1	22	23	20
199	8.8	13	5.0	22	23	20
200	8.7	13	4.9	22	23	20
201	8.6	13	4.8	22	23	20
202	8.5	13	4.7	22	23	20
203	8.4	13	4.6	22	23	20
204	8.3	13	4.5	22	23	20
205	8.2	13	4.4	22	23	20
206	8.1	13	4.3	22	23	20
207	8.0	13	4.2	22	23	20
208	7.9	13	4.1	22	23	20
209	7.8	13	4.0	22	23	20
210	7.7	13	3.9	22	23	20
211	7.6	13	3.8	22	23	20
212	7.5	13	3.7	22	23	20
213	7.4	13	3.6	22	23	20
214	7.3	13	3.5	22	23	20
215	7.2	13	3.4	22	23	20
216	7.1	13	3.3	22	23	20
217	7.0	13	3.2	22	23	20
218	6.9	13	3.1	22	23	20
219	6.8	13	3.0	22	23	20
220	6.7	13	2.9	22	23	20
221	6.6	13	2.8	22	23	20
222	6.5	13	2.7	22	23	20
223	6.4	13	2.6	22	23	20
224	6.3	13	2.5	22	23	20
225	6.2	13	2.4	22	23	20
226	6.1	13	2.3	22	23	20
227	6.0	13	2.2	22	23	20
228	5.9	13	2.1	22	23	20
229	5.8	13	2.0	22	23	20
230	5.7	13	1.9	22	23	20
231	5.6	13	1.8	22	23	20
232	5.5	13	1.7	22	23	20
233	5.4	13	1.6	22	23	20
234	5.3	13	1.5	22	23	20
235	5.2	13	1.4	22	23	20
236	5.1	13	1.3	22	23	20
237	5.0	13	1.2	22	23	20
238	4.9	13	1.1	22	23	20
239	4.8	13	1.0	22	23	20
240	4.7	13	0.9	22	23	20
241	4.6	13	0.8	22	23	20
242	4.5	13	0.7	22	23	20
243	4.4	13	0.6	22	23	20
244	4.3	13	0.5	22	23	20
245	4.2	13	0.4	22	23	20
246	4.1	13	0.3	22	23	20
247	4.0	13	0.2	22	23	20
248	3.9	13	0.1	22	23	20
249	3.8	13	0.0	22	23	20
250	3.7	13	-0.1	22	23	20
251	3.6	13	-0.2	22	23	20
252	3.5	13	-0.3	22	23	20
253	3.4	13	-0.4	22	23	20
254	3.3	13	-0.5	22	23	20
255	3.2	13	-0.6	22	23	20
256	3.1	13	-0.7	22	23	20
257	3.0	13	-0.8	22	23	20
258	2.9	13	-0.9	22	23	20
259	2.8	13	-1.0	22	23	20
260	2.7	13	-1.1	22	23	20
261	2.6	13	-1.2	22	23	20
262	2.5	13	-1.3	22	23	20
263	2.4	13	-1.4	22	23	20
264	2.3	13	-1.5	22	23	20
265	2.2	13	-1.6	22	23	20
266	2.1	13	-1.7	22	23	20
267	2.0	13	-1.8	22	23	20
268	1.9	13	-1.9	22	23	20
269	1.8	13	-2.0	22	23	20
270	1.7	13	-2.1	22	23	20
271	1.6	13	-2.2	22	23	20
272	1.5	13	-2.3	22	23	20
273	1.4	13	-2.4	22	23	20
274	1.3	13	-2.5	22	23	20
275	1.2	13	-2.6	22	23	20
276	1.1	13	-2.7	22	23	20
277	1.0	13	-2.8	22	23	20
278	0.9	13	-2.9	22	23	20
279	0.8	13	-3.0	22	23	20
280	0.7	13	-3.1	22	23	20
281	0.6	13	-3.2	22	23	20
282	0.5	13	-3.3	22	23	20
283	0.4	13	-3.4	22	23	20
284	0.3	13	-3.5	22	23	20
285	0.2	13	-3.6	22	23	20
286	0.1	13	-3.7	22	23	20
287	0.0	13	-3.8	22	23	20
288	-0.1	13	-3.9	22	23	20
289	-0.2	13	-4.0	22	23	20
290	-0.3	13	-4.1	22	23	20
291	-0.4	13	-4.2	22	23	20
292	-0.5	13	-4.3	22	23	20
293	-0.6	13	-4.4	22	23	20
294	-0.7	13	-4.5	22	23	20
295	-0.8	13	-4.6	22	23	20
296	-0.9	13	-4.7	22	23	20
297	-1.0	13	-4.8	22	23	20
298	-1.1	13	-4.9	22	23	20
299	-1.2	13	-5.0	22	23	20
300	-1.3	13	-5.1	22	23	20
301	-1.4	13	-5.2	22	23	20
302	-1.5	13	-5.3	22	23	20
303	-1.6	13	-5.4	22	23	20
304	-1.7	13	-5.5	22	23	20
305	-1.8	13	-5.6	22	23	20
306	-1.9	13	-5.7	22	23	20
307	-2.0	13	-5.8	22	23	20
308	-2.1	13	-5.9	22	23	20
309	-2.2	13	-6.0	22	23	20
310	-2.3	13	-6.1	22	23	20
311	-2.4	13	-6.2	22	23	20
312	-2.5	13	-6.3	22	23	20
313	-2.6	13	-6.4	22	23	20
314	-2.7	13	-6.5	22	23	20
315	-2.8	13	-6.6	22	23	20
316	-2.9	13	-6.7	22	23	20
317	-3.0	13	-6.8	22	23	20
318	-3.1	13	-6.9	22	23	20
319	-3.2	13	-7.0	22	23	20
320	-3.3	13	-7.1	22	23	20
321	-3.4	13	-7.2	22	23	20
322	-3.5	13	-7.3	22	23	20
323	-3.6	13	-7.4	22	23	20
324	-3.7	13	-7.5	22	23	20
325	-3.8	13	-7.6	22	23	20
326	-3.9	13	-7.7	22	23	20
327	-4.0	13	-7.8	22	23	20
328	-4.1	13	-7.9	22	23	20
329	-4.2	13	-8.0	22	23	20
330	-4.3	13	-8.1	22	23	20
331	-4.4	13	-8.2	22	23	20
332	-4.5	13	-8.3	22	23	20
333	-4.6	13	-8.4	22	23	20
334	-4.7	13	-8.5	22	23	20
335	-4.8	13	-8.6	22	23	20
336	-4.9	13	-8.7	22	23	20
337	-5.0	13	-8.8	22	23	20
338	-5.1	13	-8.9	22	23	20
339	-5.2	13	-9.0

Silent Keys

Due to increasing space demands obituaries should be no longer than 200 words.

The WIA regrets the recent passing of:

D (Doug)	Wilson	VK3EIM
H (Harry)	Kinnear	(ex)VK4VJ
G W (George)	Luxon	VK5RX
C E	Sangster	VK6CS

George Luxon VK5RX

I first met George in 1930 when he was operating his own business selling and servicing "wireless" sets. He came to the small factory where I was employed to purchase valves and other components. About this time the industry made the change from "wireless" to radio.

Like most of us at that time in the early to mid "20s, George encountered "wireless" at high school, where he made his first crystal set. In 1928, he gained his amateur licence with the callsign 5RX, and then moved into the radio industry.

In the early '30s, the Depression forced George from his business into the radio service department of several radio retailers. In 1940 he abandoned the rough and tumble of the private sector and joined the radio division of the PMG department, specialising in the studio recording section, where he remained until he retired in 1973.

He was very active as an amateur until 18 months ago, his health started to fail — a total of 62 years. George built his own equipment in 1928, including a transformerless power supply made up of 24 "slop jars" connected directly into the mains!

He operated exclusively on CW for the first 25 years, changing to phone c 1953. He collected many certificates, and had confirmed over 300 countries. He was attempting to obtain DXCC on all HF bands.

George was QSL card manager for 50 years — 1930 to 1980, and was granted Life Membership. During the mid-30s he was Vice President. Some years ago, George set up the Old Timers annual luncheon, which has been a great success.

George died 12-8-92, aged 84 years.

Sincere sympathy is extended to members of his family.

John Allan VK5UL

Doug Wilson VK3EIM

Doug passed away on 4th July 1992 aged 81 years, after a short spell in hospital with bronchio pneumonia. A perfectionist and a jack of all trades. Spitfires in the Battle of Britain began his aircraft association. In 1952 he, with his family migrated to Melbourne joining ANA and continued studying airframes of DC3-4's. He was instrumental in setting up TAA's inaugural Helicopter Maintenance Division. His helicopters took him all over VK, the Snowy and Antarctica.

An accomplished musician he played both the trombone and piano.

His family became musical and jam sessions self started. He built a family home and a weekender at Torquay in his spare time.

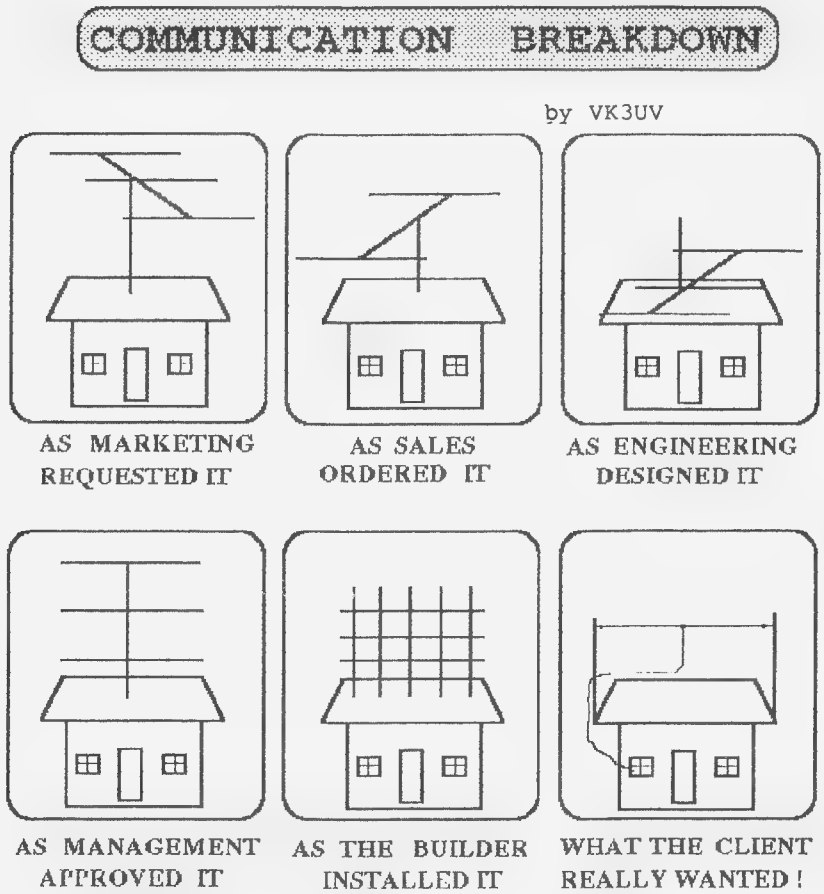
Retired for 12 years, bowls was not enough. An article on Amateur Radio in the Green Guide, some determination and he became VK3MME, then VK3EIM within 10 months. Moorabbin Radio Club weekly meetings gave him a new found companionship. Talks, lectures, and Packet grabbed him, and he was into computers.

Becoming a proficient CW operator was his goal, thus he was a regular attendee on the nightly 15 WPM 80 metres net. Membership of the Ex-G net VK group was automatic. His Scottish accent a give-away, even after 40 years in VK. His DX activity was slow, and he figured his setup was poor, but he became excitable when he did get through. I was privileged to share some of that joy. Doug's water pipe antenna farm was kept vertical through many windy days with pop rivets. He sure knew how far a rivet could be stretched. Four years of Amateur radio was jam packed, daily on phone or CW nets, RTTY or Packet frequencies. He will be sadly missed.

He was always appreciative of the help given to him along the way.

Our sincere condolences to his surviving wife Cathie, son Ron and daughter Sylvia, and their families of four grandchildren.

Ron VK3AEO



How's DX?

Stephen Pall VK2PS, PO Box 93, Dural NSW 2158.

Talking about DX, DXpeditions and special callsigns, does it irritate you that, after waiting five or even 10 minutes and listening to an ever-increasing noise from a "dogpile", you still do not know the identity of the DX station?

Of course, not all the DX operators are behaving like this — there are a few rare exceptions. However, all in all, it is a bad practice and is getting worse as time goes by. I am sure you have heard all this before. The DX station calls constantly "QRZ?" and gives a continuous monotone "5x9" report, and identifies itself or its QSL manager only, when some impatient prospective "client" urges him to do so. It was found by others, and logic would indicate that by giving your full identification, quite often (say after five to 10 contacts) — namely: callsign, location, name of operator and QSL address — the QSO rate per hour can be speeded up considerably.

The DXpeditioner should never assume that every DXer has access to DX bulletins, press releases and/or cluster packet information which would tell the world who he is, and on what frequency he operates.

For a true DXer on an expedition, the "little pistol" with a 100 Watt output and a dipole antenna should be more important than the "big gun" with his kilowatt.

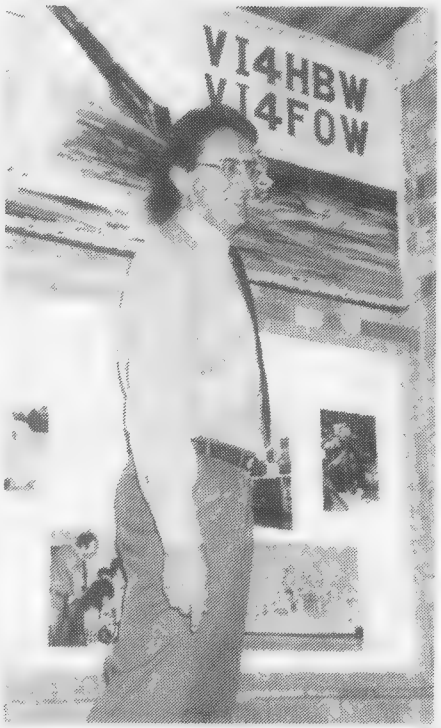
Willis Island — VK9W

It appears that the joint Mellis Reef-Willis Island expedition planned by Jim VK9NS (see August AR) will concentrate only on the activity from Willis Island. Jim announced on the air on 30 August that, due to lack of support for the Mellis activity, a mini-expedition will be organised to Willis Island only. It is planned that Jim VK9NS, Kirsti VK9NL and Atsu VK2BEX will be the operators, and the activity is subject to official permission for seven or more days, probably from 7 October to 14 October, using the callsign VK9WW.

Cocos (Keeling) Island — VK9C

Lionel VK6LA will return to Cocos (Keeling) Islands sometime in November 1992, and will be there for two or three months, giving everybody a good opportunity to work him, under the callsign VK9CB. He intends to operate mostly SSB, RTTY and some CW mode.

He will take a linear with him, a triband beam and some form of longwire multiband antenna. His last operation from Cocos was from 7 June to 2 July. All direct QSLs and Bureau cards were answered as at the middle of August. Lionel notes that, after he departed from Cocos, the callsign was pirated and was heard on 21 MHz CW. All cards for the pirate operation were returned to the senders with explanation.



"The Mayor of Hervey Bay (Qld) Fred Kleinschmidt opening the Club Rooms of the Hervey Bay Amateur Radio Club."

Tasmania — VK7

In the month of November, the call VI7AJT will be on the air celebrating the discovery of the island named Van Diemen Land by its discoverer, Abel Janson Tasman, 350 years ago.

Bangladesh — S2

As predicted in last month's "AR" there was some new activity from this much sought after country. Jim Smith VK9NS slipped through Sydney unnoticed on his way to Bangladesh, where he became active as S21ZA from 5 August 1800 UTC (local time 0001 on 6 August) until 2359 local time on 12 August (1800 UTC on 12 August). Jim was active on all bands including WARC in the SSB, CW and RTTY mode, and worked some 6500 stations despite adverse propagation on some days. He used his trusty Icom 750 Butternut vertical, plus a linear and other bits and pieces. Not to be outdone, Rudi DK7PE flew in from Angola, where he was active as D2CW, and was promptly on the air as S21ZC. He was active mainly on CW, and took part in the WAE contest. He left Bangladesh after a few days of operation. Eric WZ6C was in the USA on vacation, has not been heard yet. Rumour has it that he was issued the callsign S21AB.

Seanet 1992

As announced briefly earlier, the SEANET Convention will be held from 29 October to 1 November in the Beauford Hotel, Darwin. A full program has been arranged, including lectures, sessions and entertainment. If you plan to attend send your application urgently to: The SEANET Committee, Darwin ARC, PO Box 37317, Winnelie NT 0821, or phone Gary Woods, (B): (89) 84 3277 or (H): (89) 83 1620.

Canton Island — T31

Canton Island is a small coral island in the Pacific Ocean belonging since 1979 to the independent state of Kiribati. It is part of the Phoenix Island group and, in amateur radio circles, is known as Central Kiribati.

The island lies at 2 degrees 50 minutes south and 171 degrees 43 minutes west, and it is of a typical circular atoll formation. The island was discovered by whaling ships around 1820, and when its potential for aviation use was realised in 1937, both the USA and Great Britain established settlements on the — until then uninhabited — island. The two powers controlled this and the nearby Enderbury Island by a joint agreement as from 1939. A weather station was established by the United States in 1938, and later a major airstrip and seaplane base was built during World War II. In those days the island had a hospital, two power stations, numerous buildings for utilities, and dozens of houses. the population in 1950 was 272. the base at that time was used by various commercial airlines flying between America, Australia and New Zealand. Progress caught up with the island, however, both politically and physically. In 1979, the island group became part of a sovereign nation called Kiribati. Modern jet aeroplanes bypassed Canton Island, the population dwindled, the established buildings and facilities have fallen into disrepair. At present only about eight families live on Canton Island, comprising about 40 people, which includes three policemen, and one of them is also the fire officer. However, all is not lost. According to an agreement recently signed between the government of Kiribati and Air Nauru, there will be an airlink between Tarawa (T30), Canton Island (T31) and Christmas

"On the left is Jack VK2CX, with Chris VK2PZ, long time Dxers, and between them they have logged 103 years of Amateur Radio — not a bad effort!"

Island (T32), which will facilitate closer contacts between the various island groups. There are plans to reopen the disused airbase which can carry aeroplanes as big as a Boeing 747.

Two Australian amateurs, Warwick VK4AP and Ken VK4WKB, dropped into this peaceful scenery on 22 August and began operations immediately, late at night (local time) with the aid of a hurricane lamp. They used the callsigns T31AP and T31KW. They left the island three days later, on 25 August, and on 30 August were already on the air as 3D2AP and 3D2KW on Fiji. According to unconfirmed reports, they liked the short operation so much that they intend to return to Canton Island later during the year. QSL cards should go to their home call.

Heard Island — VK0

The planned DXpedition by Jim VK9NS is now in a better shape than ever. Various DX organisations in the USA, Japan and in the United Kingdom promised good financial support. Liaison with the Australian Antarctic Division in Hobart has been maintained, various query points were clarified and an official formal application for permission to land, and for the use of existing facilities was lodged with the authorities. If you have not yet worked Heard Island, and you need it for your DXCC, a small donation from you will help towards achieving this goal. Please forward your donation to HIDXA, Heard Island Expedition, PO Box 90, Norfolk Island 2899, Australia.

Future DX Activity

- Jacques FD1PJQ will be in Addis Ababa for the next three years. He will be active on 20, 15 and 10 metres as ET3JR. At the moment he operates with verbal permission only, but hopes to get written permission soon. QSL to FD1OYK.
- Sigi DJ4IJ will be active from Benin as TY1IJ, probably at the end of December.
- John WA4WKY is with the American Embassy in Mozambique and will operate as C9RJJ. QSL will go to W8GIO.
- FR5AI/G expects to be on air for a month or so in October.
- HL900 will be on the air for the next 12 months. QSL to the home call N6PIC.
- SP0TPM will be the callsign of SP6TPM from 1 September to 31 December, to celebrate the 35th anniversary of the Policy Amateur Union, PZK.
- Detlef OE3DKS is the new operator activating XT2DK in Burkina Faso.
- Trinidade PY0TUP will be active until 15 October. QSL goes to PT7BI (SSB) and to PY1RO (CW).

Interesting QSOs and QSL Information

Note: callsign, name, frequency, mode, UTC, month.

- XU8CW-14 MHz-CW-2348-July. QSL to FD1GTR.
- VP9MV-Luigi-14 MHz-CW-0556-July. QSL to Bureau.
- CO2MA-Ed-21 MHz-SSB. QSL to JH1GIO.
- 5Z4BI-Bill-14195-SSB-August. QSL to W4FRU John Parrott, PO Box 5127, Suffolk, VA 23435, USA.
- EA9KB-14225-SSB-0645-August. QSL to Callbook address.
- ZK1JR-Joe-1422-SSB-0627-August. QSL to AA5WY Joseph A Rodgers, PO Box 752910, Dallas, Texas 75275, USA.
- ZA1BM-Bujar-14192-SSB-0502-August. QSL to PO Box 5, Elbasan, Albania.
- AM92EM - Rafael - 14210 - SSB - 0723 - August. QSL Bureau.
- 9H4CM - Charlie - 14205 - SSB - 0449 - August. QSL via Bureau.
- T31AP - Warwick - 14222 - SSB - 0449 - August. QSL to VK4AP.
- GJ4HSW - Frank - 14204 - 0622 - August. QSL via Bureau.
- ZF2SQ-Blaine-14226-SSB-0606-August. QSL to WA0JTB Blaine A Malmedal, 121 W Logan, Serling, CO 80751, USA.

From Here and There and Everywhere

- The SO prefix is issued to foreign radio amateurs operating from Poland.
- Donald J Shearer W0JRN advises that he is QSL manager for the following stations: ZK2AP, 4S7OL, VP2VGS, HI3RST/KP5 and WP4ATF/KP5.
- FG4FR receives his QSL cards via FG5BGN or via QSL Bureau.
- Sid VK2DID passes on some information he received from G4AYO about the VP8 situation. VP8CBA arrived on South Georgia on 5 April after a stormy ride from South Sandwich. He was active from South Georgia from 6 April 1330 UTC until 1100 UTC on 8 April. During that time he made 5000 CW contacts. Before his South Georgia activity he was part of the VP8SSI team which arrived there on 20 March. The South Sandwich activity started as 2340 UTC on 21 March, and the team left on 3 April, after 39,000 QSOs, which were mainly in the CW mode. G4AYO further advises that, contrary to the information contained in the "Callbook", there is no QSL Bureau on the Falklands. Box 260 is for the use of MPA members (civil contractors working at Mount Pleasant Base) only, and cards may be addressed to MPA/xxx where the xxx the three letters of the callsign. Two-letter suffixes are not members of the MPA, and it is suggested they should be addressed as VP8xx, c/- Postmaster Port Stanley, Falkland Islands, or addressed to the QSL manager, if such is given.
- If you need a card from VK0ML (who lives now in Tasmania) write directly to M Loveridge, c/- PO Kingston, Tasmania, Australia.

- Romeo 3W3RR, Victor UH8EA and Roman UB1KA had a brief activity in Iran as 9D0RR, most of it in the CW mode. QSL to NT2X Ed Kritsky, c/- PO Box 766, Brooklyn NY 11230, USA.
- 9X5HG is active again, mainly on CW. He was on vacation in the USA.
- Bing VK2BCH — of Rotuma fame — was in hospital lately, and is recuperating. We wish him a speedy recovery to regain his full strength for a future DX activity.
- The address for the Croatian QSL Bureau is HRS-QSL Bureau, PO Box 564, 4100 Zagreb, Croatia. Cards with the following prefixes will be handled: YU2, YT2, YZ2, 4N2 and 9A.
- The DX Bulletin, edited by Chod VP2ML in Fulton CA, celebrated its 13th birthday on 14 August. Congratulations!
- The Zimbabwe Amateur Radio Society sponsors the Beacon Z21ANB, which you might hear on 28250 KHz.
- The proposed Japanese activity from Lord Howe Island VK9L has been postponed, until possibly February 1993.
- The ZS3 callsign is not Namibia any more. It is a new call area being part of the Cape of Good Hope Province, north of the Orange River.
- Amateur radio is banned in Uganda 5X.
- The Hervey Bay Amateur Radio Club (Qld) made 20,000 contacts with 127 different countries during the past 12 months, operating with the special calls VI4HBW, VI4SZF Fraser Island, and this year as VI4FOW. They now have well-appointed clubrooms. The local council and the regional tourists boards are very supportive of the club activities. Members of the club were also the instigators for the establishment of the local community FM broadcast station.

QSLs Received

Note: W=week; M=month; Y=year; FM=from; MGR=manager/call; OP=operator/call.

Direct QSLs Received

BY5HZ(30 M FM OP), T32LN (4M FM MGR VK4CRR), T30RT (4 M FM MGR) HL9HH (2Y FM OP), C21BR (4M FM OP).

Bureau Cards Received

YJ0ABF (2Y FM OP DF5WA), 9V1YS (5M FM OP), P4/WB3EFQ (8M FM OP) C31SD (4Y FM MGR CT1AMK), KB6CC/V63 (10M FM OP KB6CC), JW6WDA (3 Y FM MGR LA5NM), V63ST (12M FM OP), VP9WS (1Y FM MGR) HP6AYU (12M FM OP).

Thank You

Many thanks to all those who sent in news, reports and snippets of information. An especially big thank you to: VK2BEX, VK2DID, VK4AP, VK4OD, VK4OH, VK6APK, VK6LA, VK7JC, VK9NS, OY7ML, W0JRN, and the following publications: QRZ DX, the DX Bulletin and the DX News Sheet.

Good DX and 73.

VHF/UHF An Expanding World

Eric Jamieson VK5LP PO Box 169 Meningie South Australia 5264

All times are UTC

Six metres

This band continues to remain very quiet, particularly from the F2 propagation viewpoint. Evidence of this is the absence of operators letters and the phone rarely rings.

However, by the time you read this we may be in a short period of equinoxial activity, failing that then November should see an increase in Es activity as the summer period approaches. If we are in fact really down at a low point following Cycle 22, then we can expect increased Australia wide coverage via Es and if the short skip prevails at any time then we should be trying two metres, in fact, operators would be wise to monitor 144.100 during all periods of intense Es.

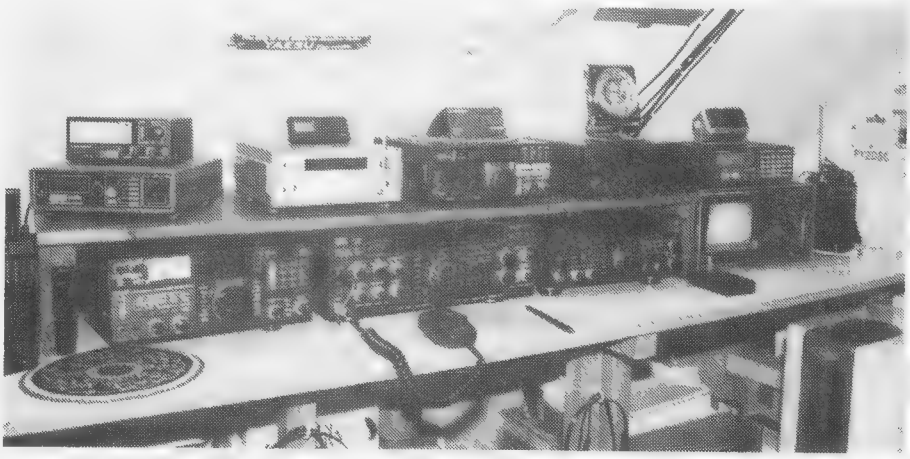
The northern hemisphere has been enjoying vast quantities of Es during their summer and if the same pattern is repeated in the southern hemisphere summer then we should be in for some good times. Call on 50.125 to initiate contacts.

From the log of GJ4ICD

1/7: 9H. 3/7: 7Q7, ZA1A, 9K2ZR. 5/6: OH, SM, LA, OY6A, UX1A (new country — 133), UA2, YU, I, DL, OE, 4X4, 9A3. 6/7: OE, DL, CT1, ES5, UX1A, OX. 7/7: UX1A, IK0, CN8. 10/7: EH5CJ (new country — 134), 7Q7, UA2. 12/7: EA6, ZS6WB, 7Q7. 15/7: IK0, CU1. 16/7: EH3, TA2/OZ1DOQ, YU, F. 17/7: I2A, 9H, TA5ZA, YO, YU, 4X1, TA6, 7Q7. 18/7: ES5, EH9, EH6 and these three are new countries for a tally now of 137 worked! 4X1, YL/ES9C. 19/7: I, YU, 9H, EA9. 20/7: EA8, CN8, EH9, EA, LA, SM, OH, 4X4, 5B4, YU, I, IT9, 9H, OK, DL. 21/7: G3KOX worked W1, W2 late at night. 22/7: G3NSM worked W, G0JHC worked SP. A great Es month.

On 10/7 Spanish stations were granted 50 MHz privileges with 80 stations receiving permits and they will be operating using the prefix EH. This makes 150 legal countries that have been worked from the British Isles on 50 MHz and is the highest score in the world so far, however, no one operator has worked them all.

Scattered amongst Geoff's report are mentioned some very good contacts on 144,



The GJ4ICD monitoring station — see text for details.

432 and 1296 MHz. He also said that GJ7LJJ had sent him a copy of his 50 MHz dx log, using an indoor dipole — it reads like an HF log with most of Europe listed. Who needs high power?.....VK5LP.

The photograph shows the monitoring station of Geoff GJ4ICD who adds that it is above my TV shop and tells me what is going on when I'm at work, then it takes me six minutes to get to my elevated site on the north coast of Jersey, three minutes if the band opens to VK and one minute for ZL! Some monitoring station.....VK5LP

The G4UPS report

This report from Ted Collins G4UPS again illustrates the variations of the 50 MHz band between his location at Devon and that of Geoff GJ4ICD on Jersey Island. Its worth taking a few minutes to make some comparisons and to again observe just how much is available to be worked on a daily basis in the UK/Europe area.

Stations heard or worked — 2/7: 4N3/b, TA5, YO2, I2, 5B4, ZC4, OK2. 3/7: 4N3/b, ZA, 4X7, 9H5, OY3, 9K2, YU7, CT1, ZB0, CT0. 4/7: OY3, EA1, 9H1, ZA, CT0, ES6, 5B4, 4X1, I, OZ, LZ1. 5/7: SM, YU, UA2, ES1, OH, KP3, KP2, OH, LA, UX1, 4N3/b, HB9, 9A3, DL, OE, 2E0. 6/7: IC8, 9H5, EA3/b, 5B4/b, CT0, ZC4, TA5, 4U1ITU, 9A1, ES1, OH1/b, UX1, SM, OZ, OH, LA. 7/7: UX1, KP4, LY2, UA2, OH, ES5, SM, CN8. 8/7: ZA, IK0, 4N3/b, 9K2, YO7, F6, ES5, UX1.

9/7: OH1/b, SM3, 4N3/b, UA2, SZ2/b, Y2, 9A1, OE5, OK2, ES5. 10/7: 9H5, IS0, IK8, ZB0T, CT1. 11/7: EH6, GB6/b, CT1, 9H1, IM0, 9H5, 7Q7, OE6, YU1, 4N3/b. 12/7: YU3, ZB0T, ZS6WB, EH3, 7Q7. 15/7: EA3/b, CT1, ZB0T, F6. 16/7: DL2, LZ1, EH3, YU1, OK1, OZ7, SM, CT1, ZB0T, IS0. 17/7: I2, F, YT3, LZ1, IS0. 18/7: YL/ES9C, OH1, I2, 9H5, CT0, ZB0T. 19/7: I0, 9H5, ZB0T, CT1, EA8, CN8. 20/7: ES5, OK2, OZ, SM, LA, OH, DL, OK, SO5, OZ7, 4N3/b, TA5, IN3, YT3.

50 MHz QSL managers

Courtesy the UK Six Metre Group via Ted Collins G4UPS, comes a QSL manager listing covering more than 500 operators. This list is published once a year by Harry Schools K3AB, 1606 South Newkirk St, Philadelphia, Pennsylvania, 19145 USA and can be obtained from him for $1 in US funds. Harry says it is accurate as he can make it.

If you have been spending long hours trying to find a QSL route, maybe it is on this list. A stamped self addressed envelope to VK5LP may elicit the information you need or I can advise you if it is not on the list. I would like to publish the list but it is far too long — I can hear the editor saying now that it's just as well you didn't ask!

The VK9/P29 position

In the July issue of AR under the heading ARRL DXCC List I referred to the situation prevailing in regard to when New Guinea changed from VK9 to P29. Some more sleuthing has taken place and I report the following.

I have been in contact with Brian Stevens, VK5BAS, who was the Senior Military Communications Officer for some years, both before and after independence (16/9/75), and he was responsible for the issue of all callsigns relating to the country. He said that the P29 callsigns for amateurs became valid at midnight on 19/12/73, which in reality would really be 20/12/73 and this was some 21 months before independence. He confirmed this by reference to the log book of his station, P29FV, for his first contact ten minutes after midnight on that date.

So, despite what the ARRL DXCC desk says, P29 call signs were actually being issued prior to independence, after that, the whole country still remained P29. This means that VK9 was in use for the two divisions of the country until midnight on 19/12/73, after which date P29 was also valid for the two divisions. With the joining of the two countries at independence, P29 became the prefix for the whole country.

Therefore, in reality, it is still possible to have QSLs for three countries for that area — nothing has changed from my original statement except the commencing date, which is now as accurate as we can get it. Thus, for instance, those with confirmation of P29GA at Lae during 1974, do have a valid QSL for the Territory of New Guinea and there are probably others, but look very closely at the date and location on the card! For the purposes of my Six Metres Standing List, three confirmations will be possible. Now some operators will be happy, others unhappy, but that is the luck of the game!

The Microwave Bands

Apropos my recent comments that I received very little information regarding any activity on the bands above 50 MHz, especially the microwave bands and it seemed appropriate that we should be hearing more with the wind down of Cycle 22 and its application to F2 propagation on 50 MHz.

In response, I received a letter from Keith VK6XH from Eden Hill, Western Australia with some information regarding 10 GHz activity in the west. As his letter is not long I repeat some of it here: Eighteen months ago, Barry VK6ZSB, Brian VK6YBR and I got together to get 10 GHz up and running. I had been active in the UK ten years ago where I held G1GHZ as the Merseyside Microwave Group. The end result is a 30 MHz receiver and transmitter board and a C+K 10 GHz linear mixer available from us for $40. So far 38 heads and 42 boards have been sold and at least ten people are now on the air. The regulars are the three above and Greg VK6YBI. Greg and I have operational 10 GHz FM ATV and as of last week 24 GHz wideband FM. Wally VK6WG in Albany is still active on all the microwave bands and is now playing around with 10 GHz.

The above news is a start and thanks for sending it Keith. But apart from news from the "aircraft enhancement" boys in VK1,2 and 3, who inevitably, must feel they cannot be constantly going over the same written ground all the time, little else arrives regarding 144, 432 and 1296.

Fanning the flames

Re 144/432/1296 etc. Has all activity along the Queensland coast ceased? What does the Brisbane gang do between solar cycles? Does anyone from VK2 try to work ZL these days? There used to be some activity southwards towards Perth along the west coast of WA, and north east to Darwin. Is anyone planning to do anything on 144 and 432 MHz from Darwin and Alice Springs — perhaps 144 Es during summer from Alice, or more contacts to Japan, but why not 432? There must surely be occasions when 432 should extend from Alice Springs to Adelaide. The VK5s no doubt will hope for the usual contacts to Albany in October and again at the end of next January, but little is exchanged between VK5 and Melbourne except from Mount Gambier. There are limited contacts between VK3 and VK7.

I do accept that in many cases the high solar activity of Cycle 22 has kept a lot of operators on 50 MHz, both day and night, but with F2 disappearing, now may be the time to look elsewhere. I accept that I am guilty too, but due to my physical impairment I cannot be around early morning on any band and it is often difficult at night too. Others have drifted into Packet, ATV etc. VK5 has initiated activity on 1296, 2304 and 3456 MHz with kits available for assembly, and already there has been an increase in contacts on 1296 and 2304 MHz., but I lack information.

Whenever I start stirring the pot, as above, I inevitably become nostalgic and think back to the AM days of the 1960s when it was a thrill to work into VK3 and VK7 on 144 and 432 MHz. My notebook of the time shows that from my then disadvantaged position at Forreston in the Adelaide Hills, up to 1970 I had worked 106 stations in VK3 on 144 MHz AM but I have not been able to do that on SSB, the stations seem not to be available. And how I used to envy Mick VK5ZDR, who from his

prime seaside location of Henley Beach, could consistently work over the Mount Lofty Ranges to Herb VK3NN at Yanac, on both 144 and 432. It was rare for me to do it! To work Wally VK6WG and Aub VK6XY in Albany through my 60dB hill to the west was an art in itself — they would be S1 at Forreston but S9+ in Adelaide! But it was all marvellous stuff and great fun! Sometime, maybe I should write more about it for there is a lot to tell!

So it's all possible and been done before, it only needs some keen operators at both ends for it to be done again. Maybe the above discourse will fan the flames and we will be hearing about some interesting contacts before long. Generally, I think it is in the hands of the younger operators to start fanning those flames and no doubt their increased activity will stir the older members to join in. But please tell me about it.

New land record on 3456 MHz

From The World above 50 MHz in August QST, Bill Tynan W3XO/5 reports a new USA land record for 3456 MHz between Al WB5LUA and Ron W9ZIH for a distance of 1177 km (736 miles) on 1 May 1992. Al runs 50 watts to a 1.52 m (5 foot) dish and Ron 10 watts to a 0.91 m (3 foot) dish.

Signals were 339/449. A good effort.

Closure

Closing with two thoughts for the month: The freedom of any society varies proportionately with the volume of its laughter and Speak when you are angry and you will make the best speech you will ever regret.

73 from The Voice by the Lake.

Knutshell Knowledge

Graham Thornton VK3IY PO Box 298 World Trade Centre Melbourne 3005

What follows is a brief overview of what other magazines have to say. If copies of complete articles are required, your Divisional library may be able to help; or perhaps some member of your club has the information.

Amplifiers

HF Linear

A Solid State HF Linear Amplifier (2). Mike Grierson G3TSO, RadCom vol 68 No 2 Feb 1992 pp 30 — 31. il ccts. The output filters, TR switching, ALC and SWR circuits are considered in this part. Setting-up and testing is also discussed, with emphasis on the precautions necessary to avoid parasitic oscillations.

Ameritron AL-811 MF/HF Linear Amplifier. (Product Review) Bart J Jahnke KB9NM, QST vol LXXVI No 2 Feb 1992 pp 61 — 62. il graphs and photos. A review is given of this amplifier, which includes laboratory measurements.

VHF/UHF

A Five-Component Wideband Amplifier for Your Receiver. J S "Stu" Gurske K9EYY, 73 issue #377 Feb 1992 pp 12, 49. il diags and photo. A simple pre-amplifier is described which covers a range of 100 to 2000 MHz. Its gain at the lower frequency is 33 dB.

Antennas

Loops

A Portable Short Loop Antenna for the 20 Metre Band. Robert Craighero I1ARZ, RadCom vol 68 No 3 March 1992 pp 66-68. il diags and photos. A loop of 1.62 m diameter is described. The radiating loop, and its small companion used for inductive coupling, are both constructed from RG213 coax.

Product Reviews

Cushcraft A50-6S 6-Meter Beam. Mark J Wilson AA2Z, QST vol LXXVI No 2 Feb 1992 pp 62-62. A report, with measurements, is given for this antenna.

The AL800 High Gain HT Antenna. David Cassidy N1GPH, 73 issue #377 Feb 1992 p 20. il photo. A 2 m and 70 cm dual band extendable handheld antenna is reviewed. Considerable improvement is claimed over a rubber ducky. The antenna is manufactured by ANLI International Corp, 15333 E Valley Blvd, Unit C, City of Industry CA 91746. Price is about US$40.

VBI-360 Beam Indicator. Dick Goodman WA3USG, 73 issue #377 Feb 1992 p 15. il photo. A review is given of a commercial azimuthal display of beam heading, provided by illumination of LEDs around the periphery of a map. The home QTH is at the map's centre. The display unit is available from Vector Control Systems, 1655 North Mountain, Suite 104 — 45, Upland CA 91786.

Quads

PVC Cubical Quad for 10 Meters. Wayne Mishler KG5BI, 73 issue #377 Feb 1992 pp 38, 40, 42 — 43. il diag and photos. A cubical quad is described, constructed from PVC pipe and dowels. With a series feed capacitor and a reflector tuning stub, the bandwidth is 600 kHz between 2:1 SWR points.

VHF/UHF

The Copper Cactus J-Pole. John Post KE7AX, 73 issue #377 Feb 1992 pp 9,10, 27. il diags and photos. Half inch copper pipe is used to construct a dual band J-pole antenna which works as a half wave dipole on 2 m, and three half waves on 70 cm. A double J-pole is also described.

Computers

Accessories

10-Channel RS232 Device Selector. Ranjit Singh, EA vol 54 No 2 Feb 1992 p 50. il cct. A single PC can successively control ten different devices, via its RS232 output.

LED Display Board. Anthony Nixon, EA vol 54 No 2 Feb 1992 p 51. il cct. An LED "billboard" is controlled by a PC.

Hardware

The ROMloader, an EPROM Emulator — 2. Peter Baxter, EA vol 54 No 2 Feb 1992 pp 68-70, 98. il diag and photo. This part deals with the setting-up and practical application of the device described in part 1.

Using Your PC to Control Radio Gear — 3. Tom Moffat VK7TM, EA vol 54 No 2 Feb 1992 pp 58-64. il cct, cmp and photos. An interface is described which converts RS232 output to the TTL levels required by both Icom and Yaesu transceivers. Software to control these transceivers is available from High-Tech Tasmania, 39 Pillinger Drive, Fern Tree Tas 7054 Australia.

Software

"Easy-PC" for both PCBs and Schematics. (Product Review) Rob Evans, EA vol 54 No 2 Feb 1992 pp 116-119. A review is given for this CAD program for use on IBM machines. It is available for Aust $275 from Breakthrough Computers, PO Box 432, Garbutt, Townsville Qld 4814 Australia.

Electronic Devices

Keyer

IROESK — an Infrared Optoelectronic Straight Key. L B Cepik W4RNL, QST vol LXXVI No 2 Feb 1992 pp 30-34. il ccts, diag and photos. A finger breaking an infra-red beam causes transmitter keying. Sidetone is also provided.

Miscellaneous

Light Switch. Peter Murtagh, EA vol 54 No 2 Feb 1992 pp 80-82. il cct, cmp, diag, pcb and photo. A circuit is given for a light sensitive relay, using an LDR. A sensitivity adjustment is provided.

Narrow Band Modes

AMTOR

AMC — The AMTOR Controller. Armin Bingemer DK5FH, translated by Don Moe KE6MN/DJ0HC, QEX #120 Feb 1992 pp 3-11. il ccts, cmp, pcbs and photo. A controller for AMTOR, which functions in a similar manner to a TNC for Packet, is described. The hardware contains an input filter, de-modulator, AFSK, RS-232 interface and a processor. A 16 LED display acts as a tuning indicator. The software is not described, but is promised in a forthcoming article.

Propagation

Plotting of Magnetic Deviation and Aurora (1). D J Smillie GM4DJS, RadCom vol 68 No 2 Feb 1992 pp 51-53. il cct, diag, graphs and photos. A "jamjar" magnetometer is described, which, when used in conjunction with an indicator circuit, displays magnetic variation in the horizontal plane. The readings are used to predict auroral propagation.

Plotting of Magnetic Deviation and Aurora (2). D J Smillie GM4DJS, RadCom vol 68 No 3 March 1992 pp 31-33. il graphs, map and photo. The practical applications of the equipment described in part one are discussed.

Power Supplies

Batteries

Getting the Most Out of Nickel-Cadmium Batteries. Ken Stuart W3VVN, QST vol LXXVI No 2 Feb 1992 pp 40-45. il diag and photos. A general dissertation is given on the technology of NiCad batteries, and how to ensure long battery life.

Battery Chargers

Solar Charger. Peter Phillips, EA vol 54 No 2 Feb 1992 pp 72-75. il cct, cmp, graphs, pcb and photos. A DC-DC converter is described which allows a 6 V solar panel to charge a 12 V battery. Up to one watt power can be delivered by the panel under optimum conditions.

Inverters

Powerhouse 1200: Twice The Power — 1. Peter Harris, EA vol 54 No 2 Feb 1992 pp 52-57, 91. il ccts, graphs and photos. A design is presented for a 240 V inverter, which operates from 12 or 24 V DC. A continuous rating of 1200 watt, with a surge rating of twice this value, is claimed. 28 TMOS FETs control the switching at high efficiency. A crystal oscillator holds the frequency at 50 Hz. The output waveform is not sinusoidal, but approximates a square wave. Output voltage regulation is provided. Special circuitry protects the transformer from inductive transient voltages. Available battery capacity would appear to be the limiting factor in the application of this device. It can be activated by load switching; very little current is drawn in the absence of a load.

Receivers

Product Review

Drake R8E. Peter Hart G3SJX, RadCom vol 68 No 2 Feb 1992 pp 33-35. il graph and photos. A review, with measurements, is given for this receiver.

Satellites

VFO Tracking for Less than Two Pounds. Dave Camac G1IOO, RadCom vol 68 No 3 March 1992 p 30. il cct. A tracking system is described which allows both a VHF and UHF transceiver to compensate for Doppler shift, using one set of controls.

Technology

Microwave

Getting Started on the Microwave Bands. Rick Campbell KK7B, QST vol LXXVI No 2 Feb 1992 pp 35-39. il ccts and photos. An introduction is given to the techniques used for microwave communication. A design is given for a 5760 MHz transverter for use with a 2 m transceiver.

Miscellaneous

A Radio-Control Primer. George A Wilson Jr W1OLP, QST vol LXXVI No 2 Feb 1992 pp 18-22. il cct, and photos. A broad overview is given of modern techniques to control model "planes, boats and cars."

Test Equipment

Signal Generator

An NE-602 RF Signal Generator. Julian Kerr, 73 issue 377 Feb 1992 pp 22, 24-26. il ccts, cmp, graphs and pcb. A signal generator is described in detail, which uses crystal control and can be modulated. A general discussion is also given about the NE-602 and its application to other oscillator circuits.

Transceivers

Product Reviews

QST Compares: The Radio Shack HTX-100 and Ranger Communications RCI-2950 10-Meter Mobile Transceivers. Bruce S Hale KB1MW and Rus Healy NJ2L, QST vol LXXVI No 2 Feb 1992 pp 63-67. il photos and graphs. A side-by-side comparison is made of these two transceivers with laboratory measurements.

The Radio Shack HTX-202 2 Meter FM Transceiver. Gordon West WB6NOA, 73 issue #377 Feb 1992 pp 28, 30, 32-33, 44. il photos. A review, with measurements, is given for this "Realistic" handheld transceiver.

Glossary of Abbreviations

il The article contains illustrations, a list of which follows.
cct A circuit diagram
cmp A component layout drawing
EA Electronics Australia
diag A mechanical drawing
pcb A master drawing from which printed circuits may be produced
QSTVE QST Canada
RadCom Radio Communication
73 73 Amateur Radio Today

The above items are reproduced from Amateur Radio Technical Abstracts Volume II 1992 ISSN 1036-3025 — to be published.

Sign up a new WIA member today — we need the numbers to protect our frequencies and privileges.

Repeater Link

Will Mc Ghie VK6UU @ VK6BBS 21 Waterloo Cr Lesmurdie WA 6076

Repeater Antenna

The RF performance of your repeater is dependent on how well the antenna works. Repeater antennas have to be first class in all respects. Poor SWR not only indicates low overall performance, but how well the duplexer can provide that all important isolation between receiver and transmitter. The cavity duplexer has the job of providing up to 100 dB of isolation between the receiver port and the transmitter port, with as little loss between the receiver and antenna, and transmitter and antenna, as possible. If your repeater antenna is not working well, the duplexer will not be seeing 50 ohms. This can result in not only poor duplexer performance, but confusion with the correct setting up of the duplexer.

If you find that the repeater duplexer gives different results with different lengths of cable between receiver and duplexer, and transmitter and duplexer, then this is an indication that there is an impedance mismatch some where. Even changing the length of aerial cable can change the desense characteristics and losses in your repeater set-up.

There is a further important requirement for the repeater antenna, and that is perfect electrical connections within the antenna construction. Any poor connections show up as intermittent desensing. Weaker signals are characterised with a crackle scratchy sound. This effect is worst in windy conditions. As the antenna moves in the wind any intermittent connection produces this crackle type of noise.

The reason why poor metal to metal connection is a problem with repeater antennas, and not general Amateur type use, is because of the transmitter and receiver sharing the antenna at the same time. The transmitter power applied to the antenna will produce wide band noise at any poor metal to metal connection. This noise is then applied to the repeater receiver and hence the crackle.

Having tried many different types of repeater antennas, one in particular stands out as being the worst for this type of noise. The all Aluminium Ringo Ranger of a few years ago, gave no end of trouble when used as a repeater antenna. There were several metal to metal joints that were crimped together with hose clamps. After a period of use intermittent desensing would show up. Cleaning and the addition of Alminox would solve the problem for a time, but the problem would always come back. The only solution was to aluminium weld all the joints together. Not always a simple solution. Eventually this antenna was removed from the list of suitable repeater antennas.

One simple home built antenna that has stood the test of time is a variation of the dipole. I first saw this antenna described in 73 magazine many years ago, and it has appeared in several publications over the years under various names. I call it a coax dipole. If you know its correct name and a description on how it works let me know so I can pass the info on.

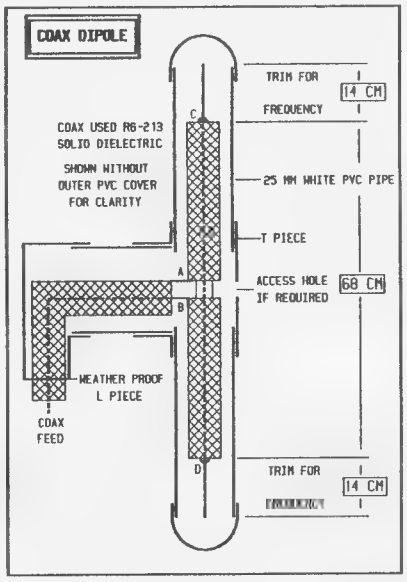
The advantages this antenna has are many. All coax cable construction, all solder connections, easy to water proof, little or no tuning, and best of all, "always works". Note the quotation marks. The more years you spend in electronics the less sure you become of everything.

By placing the whole antenna inside white plastic water pipe, a perfect weather proofing can be achieved. The PVC pipe must be white, as other colours such as grey and orange are poor at RF.

The antenna performs as a dipole and has 0 dB gain. Varying spacing from the supporting tower modifies the radiation pattern, and tuning slightly. The closer the antenna is to the tower the lower the resonant frequency becomes. To compensate for this, shorten the length of the ends. The coax length remains unchanged. Any distance out from the tower from one eighth of a wave length, to three eighths of a wave length, will produce a cardioid pattern. At a half a wavelength spacing, a figure eight pattern results, with a null in the direction that the antenna is pointing.

Soldering the feed coax to the coax dipole can be tricky. As the antenna is inside the T piece there are a couple of solutions. With 25 mm plastic fittings it is possible to squeeze the solder iron into one of the openings and solder the feeder to the antenna. If not then it is necessary to drill a 10 cm hole in the T piece to allow access. After soldering, seal up the hole with silicone sealant. I hope the drawing makes all this clear.

The drawing is not to scale and exaggerated for clarity. Points A,B,C, and D are solder points. A and B are the solder connections for the feeder coax to the antenna. About 1 cm of coax braid is removed at the centre of the antenna, and the feeder coax soldered to points A and B. C and D are where the inner and outer of the coax part of the antenna are soldered together. The cross-hatch represents the coax braid. The outer PVC covering of the coax is not shown for clarity in the drawing, it is only removed where needed for the solder connections. The centre conductor is continuous in the antenna, as is the dielectric.



I hope that the diagram and description are sufficient for anyone wanting to construct the antenna. Trying to draw and describe any technical item is not easy. If you are like me I have trouble easily understanding these types of articles.

The antenna represents a DC short to the feeder coax. The SWR should be better than 1.3. Changing the spacing from the tower affects the SWR. With optimum spacing for the particular antenna, and or trimming the ends, an SWR of 1 to 1 is possible. RG 8 or RG 213 are easier to work with than the smaller RG 58 coax. Once the plastic pipe is fitted together it can be glued using the weld type blue glue that is made for it. Once glued it is impossible to pull apart, except with a hacksaw. The bottom of the L piece where the feeder coax enters, is best left open. Once completed the weather proofing is excellent.

This antenna can also be scaled down to work on 70 cm. Just divide all dimensions by 3. In a later article in Repeater Link, will be a description on what the effect tower to antenna spacing has on the radiation

characteristics. By choosing the correct spacing for your repeater location, improved coverage can result.

Still True

Now that the dust has settled on the new draft repeater regulations, there is time to collect your thoughts and start planning your new repeater network. At the time of writing, there has been no changes to my understanding of the liberal new regulations. All sorts of rumours fly around, particularly on packet, but to me the new regulations are a repeater builder's dream.

One interesting comment I saw on packet was "Where are all the comments on the new regulations". Could be that there was little to comment on. The new regulations are just what the repeater scene has wanted all along.

When the new regulations become official, what requirements have to be met, when putting a new repeater or link into service? My understanding is there are only two. Firstly, receive approval from your local WIA Technical Advisory Committee, so that the frequency and location you have chosen do not clash with other Amateur systems, and secondly, directly or through the WIA, inform DoTC of the transmitter frequency and location. My understanding may be incorrect but in its simplest form I believe that these are the only two requirements.

Club Business

How does your club run its administrative business? In VK6, The West Australian Repeater Group (WARG), do most of their administration via packet radio. Club minutes are posted on the local BBS for all on packet to read. The treasurer is kept informed of expenditure and notified business is sent to the secretary. There are so many ways that packet has made the running of the club easy.

For those doing the repeater development, circuits fly back and forth for use or modification. One interesting use I put packet radio to recently, was to find out the latest on a voice repeater under construction in a town ESE of Perth at Esperance.

This town is some 600 km from Perth, on the Great Australian Bight. There had been no news of this repeater for a couple of years. To find out if the repeater was on air, I consulted the latest listing of Amateurs on packet radio, and to where their packet mail is directed. I came up with 2 Amateurs on packet in Esperance and their home BBS as VK6SR. A request to both Amateurs was sent for information on the voice repeater. A couple of days later I received a message from a Sysop telling me that VK6SR BBS no longer had a HF port.

The only access that Esperance Amateurs have to the outside world on packet radio is via HF. The new home BBS for Esperance Amateurs is all the way over in Tasmania, at VK7EKA ! The request for information was redirected by the Sysop, and a couple of days later I received a comprehensive run-down of the current state of the Esperance voice repeater, all thanks to packet radio. By the way the repeater on 6750 is still not on air, but one day it will be, and chances are packet radio will let me know.

New Zealand

With all this deregulation heading our way, just what will the repeater scene be like in a few years ? New Zealand has a deregulated Amateur service, so when I heard a local Amateur relating his recent experiences with repeaters in New Zealand, I asked him to write a short article on his impressions of using ZL repeaters. Thanks Jeff VK6JKR for the following.

On a recent holiday in New Zealand, I was able to experience their repeaters firsthand. Linking of repeaters is used on both 2 metres and 70 cm to overcome difficult terrain. I operated through several links and was not aware of it until I was told.

Considering some of them were linked through numerous repeaters (especially the 70 cm "National Link"), there was no appreciable loss in audio quality. The repeater network was user friendly and just like using a non linked repeater, except for an extended tail.

It is certainly a credit to the NZART branches and Amateurs who maintain them. New Zealand Amateur repeaters do not require identification, however I did notice some used a CW ident.

My first experience with Autopatch (Phone patch) was met with enthusiasm. The audio quality again showed no appreciable loss considering a phone line was used. In Auckland the autopatch is linked to one of the repeaters on 2 metres.

The repeater had a dual use as a standard repeater and autopatch, thus eliminating the need for a separate repeater for autopatch alone. Again it was user friendly with operating procedure as simple as stating your call. Most of the calls were to non Amateur spouse advising them of location and ETA. I found it a superb way of keeping in touch and provided added security for the spouse if the Ham was late home.

Some repeaters incorporated a synthesised voice which indicated your access signal strength into the repeater by way of DTMF coding. It is an excellent way of checking antenna performance.

Anyone who knocks these ideas should visit New Zealand and experience the superb technology being used by Amateurs now. I know I came away thinking, why haven't we got this in Perth ?

Thanks Jeff for the comments on the New Zealand repeater scene.

Australia is behind not due to lack of technology or know-how, but because of regulation that has prevented the use of much of this technology. With these restrictions now about to be lifted, big changes will start to take place.

(Editor's Note: The new regulations have not been declared as yet. An announcement is expected soon — VK3ABP.)

IARUMS

Gordon Loveday VK4AL
Aviemore Rubyvale QLD 4702

Most Divisions have State Co-ordinators, VK3 being the exception. VK5 have a new Co-ordinator, John VK5ZRH, who is shaping well into the system. Observers in that state should forward their logs to him, this will help him keep in touch.

Could VK2s new co-ordinator kindly contact me, as we appear to have lost communication. I hope he received the mail I sent him via VK2 Division.

Intrusions into the amateur frequencies are on the increase again as we move into summer. Most prevalent are those on the following frequencies, 14.010 MHz, non-amateur mobiles in Indonesia, also to be found on 14.109 and 14.024 to 14.026 the ID in this case. MANADO, 79 loggings of this one alone in July. All are listed as J3E LSB. They appear to "peter out" around 14.343 MHz. Please keep a watch on these frequencies.

The VIET station VRQ normally heard on 14.073 to 14.076 is now also to be found on or about 14.283 to 14.290 MHz. Operators can successfully move this pest out of our bands by sitting on top of him, but make sure you do this with extreme accuracy, otherwise he will ignore you, CW of course. Karl VK6XW finds it pleasing to escort him out of the band.

Remember for monitoring service you only require your own two ears, and a receiver of normal sensitivity. Be satisfied with the gear on hand as we need all types of information. Listen while hunting that rare DX station. Send your reports to your state co-ordinator, except VK3 (we will accept ANY sort of paper) please send direct to me, FREEPOST No 4 A G Loveday Rubyvale Qld 4702, or VK4Kal @ VK4UN-1.

73, Gordon, Federal MS Co-Ordinator.

Over to you — Members Opinions

All letters from members will be considered for publication but must be less than 300 words. The WIA accepts no responsibility for opinions expressed by correspondents.

Amateur Radio Astronomy

Wanted: People with an interest in this fascinating and challenging application of radio receiver, antenna and computer processing technologies to form a group for the purpose of sharing ideas and techniques and for presenting a group approach to use facilities not normally available to individuals.

Please contact Bruce Carroll VK2DEQ, PO Box 128, Orange 2800. Fax (063) 62 7950.

Restoration Help Required

I restore ex-Armed Services vintage communications equipment, and now have in my possession an Australian Army Radio Set No 208 made by Radio Corporation Pty Ltd of Melbourne. I would like to know if any of your members could help me with any information on this radio to help with restoration.

Dennis Seymour ZL1UET
PO Box 88061
Manurewa West
New Zealand

Pager Interference

I was interested to read the contribution in AR September 1992 from Andrew Davis VK1DO regarding pager interference and some possible cures.

Some time ago a few customers here started complaining about interference to their packet operation from paging transmitters. Fortunately, Lex Patterson of Jenlex in Mulgrave offered to design and construct some cavity filters at very reasonable prices. I have had the opportunity to try several of Lex's cavities and found them to be very well built, of high performance and extremely reasonable cost compared to other commercial products.

It wasn't long, however, before Lex realised that even these reasonable prices would be too much for most amateurs to come to terms with. So he experimented with a range of helical resonator filters which I also had the opportunity to spend some time trying and experimenting with. My own measurements confirmed the claims made for the Jenlex filters.

A few practical examples might not go astray. Chris Edmondson VK3CE/VK3YID now uses a Jenlex helical filter with the Kenwood TM-741A in his car. Chris spends a lot of time in the Melbourne CBD and, like most of us, finds two metres virtually useless. Well, not any more! He now proudly boasts that he can comfortably work two metres all around town.

Personally I am fortunate enough to avoid the city and most other areas of high RF levels.But I do drive through an area in Mt Waverley near some community base sites, and also Doncaster Shoppingtown, which is a bit of a radio nightmare. Using a home-made helical resonator filter similar to the Jenlex HNF2 with a recently departed IC-2400A, or my new IC-2410H I can now operate in both those areas with no pager or other intermodulation or overload effects.

Cavity filters are excellent for base station applications, but only where the level of interference you experience cannot be coped with by the simpler, less expensive and much more compact helical resonators. Any two-metre installation that suffers from overload or intermodulation interference can benefit from one of the nifty little filters that Lex produces. I can certainly say that many of my customers are more than happy with the solutions he has provided to their problem, especially when he isn't an amateur himself!

John Day VK3ZJF
c/- Stewart Electronic Components
PO Box 281
Oakleigh 3166

A Touch of the Past

At a recent meeting in Perth it was agreed to form "The Beaufighter Association of Western Australia".

The main function of the association is to bring together, for social, nostalgic and similar purposes, those connected with that remarkable aircraft, either as flying or ground personnel. The aircraft was crewed by pilot and observer — the latter also known as Navigator/Wireless Operator — being trained to Morse speeds of some 20/22 wpm, using radio equipment usually of Type 1154/1155.

The purpose of this letter is to enquire whether any current amateurs were involved with Beaufighter, and who may be interested in the activities of the association.

The prime mover in forming the association is Mr Keith Nicholson, who served as a pilot with 30 Squadron RAAF, and contact can be made with him at (09) 384 4627, or with me at the address below.

Sam Wright VK6YN
19 John Street
Gooseberry Hill WA 6076
Ex-254 Squadron RAF

ARIA

I have read the letters on this subject, and stayed out of it, believing the WIA had better things to do than consider a name change.

However, a recent experience has changed my mind. If a newcomer wanted to find out something amateur radio, where would they look in the telephone directory? Certainly not under "wireless"! It would be a long time before they got to the "W" entries and, in the meantime, they might stumble across another entity!

Go to it — "Amateur Radio Institute of Australia (ARIA)". As other correspondents have noted, it's short, to the point, and conveys the message. Get the name registered before somebody else does (if they haven't already). It's also what new-

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comers to the hobby will be expecting to find, and looking to the future is more important than clinging to the past. Perhaps a compromise can be worked out — "ARIA trading as WIA" or something?

While we are at it, how about changing the name of the magazine to "Amateur Radio Australia"?

David I Horsfall VK2KFU
PO Box 257
Wahroonga 2076

New Name

In reference to my recent letter on renaming the WIA to "ARIA" (Amateur Radio Institute of Australia), it has been brought to my attention that "ARIA" is the registered name of the Australian Recording Industry Association.

"Amateur Radio Society of Australia", whilst initially attractive, has scatological undertones, as does "Australian Amateur Radio Society", so perhaps "AARI" (Australian Amateur Radio Institute is the way to go.

David I Horsfall VK2KFU
PO Box 257
Wahroonga 2076

(One should also consider the resulting change to one's designation, MWIA at present. RAIA is another possibility. Ed)

That Swastika!!

I refer to VK5CQ's letter in the August issue of "AR" and must admit that the reproduction of a 1935 QSL card from Danzig (Gdansk) and bearing the sign of the swastika did send a shiver down my spine.

I would have been quite happy to let the matter rest with the publication of Charles" letter; however, the editor's comment that "Nazi atrocities were years into the future from the date of the QSL" indicates a surprising lack of historical knowledge by the editor.

As one who grew up in Nazi Germany (I arrived in Australia in 1937), let me assure you that Nazi brutality in Germany commenced immediately after the election of that party on 30 January 1933, and grew progressively worse. In 1935 there were already a great number of concentration camps, and the extermination of Jews was well on the way.

To put it mildly, I would say that the publication of this document was in extremely poor taste.

Tom Peyser VK2ETP
10 Broughton Street
Bundanoon 2578

Signal Reports

I'm beginning to think that most amateurs are not really familiar with the RST system — judging by the number of ridiculous comments I've heard off air. How many of you know what readability 5 actually means?

A quick look in the "Bible" (the ARRL Handbook) under the "Operating a Station" chapter will show the RST system and how to interpret it.

Readability

1 — Unreadable
2 — Barely readable, occasional words distinguishable
3 — Readable with considerable difficulty
4 — Readable with practically no difficulty
5 — Perfectly readable

Now, consider these comments I've heard off-air:

"... you're 5x9, but I missed the last two letters of your call ..."

"... you're also 5x8, but I didn't catch your name, much QRM ..."

"... name here is Bill." "OK Bob, 100 percent, you're 5x9 ..."

How on earth can you give out a R5 report and NOT receive EVERYTHING the other station said???

"... lots of QRN around tonight; you're 5x7 in the clear."

In the clear??? Good grief!

The whole point is that the signal is not always in the clear, therefore some difficulty is being experienced, so why give a report contrary to actual band conditions?

Are you afraid you might offend the person at the other end if you give them only a R3 or R4 instead of R5?

In order to get a fair assessment of my station's performance I like to get signal reports I can believe. They may not be 5x9 every time, but at least I can get an idea of where I might need to improve things.

Now, as for these "DX" stations that give out automatic 5x5 or 5x9 reports — that's another pet hate!

Adam L Maurer VK3ALM
1 Jeffrey St
Dandenong North 3175

The Olive Cam

In "Over to You" in August "AR", I asked "where the "Olive Cam" finished up". My thanks to Mick VK2NBF who supplied the answers which I repeat here for other readers with an interest in the Olive Cam.

In September 1939 she was acquired by the Navy as an auxiliary minesweeper, and participated in the search for survivors from the HMAS "Sydney" in the Indian Ocean in November 1941.

She was paid off from the Navy in 1945 and returned to trade operations. However, in November 1954 she was wrecked near Green Cape, which is south of Eden, NSW.

Rod Torrington VK3TJ
4 Thistle St
Pascoe Vale South 3044

Home Built TX

It was pleasing to see something very familiar from a past era. Once amateur radio was all about putting together a transmitter out of WW2 supplies which gave us the satisfaction of working well to make many DX and local contacts. My own home-built rig was built into a 6' steel rack which I bought and transported for about 13 miles, protruding out of my then-very-small soft-top-hood Ford Anglia car. One could not do that today without being pulled over by the first police car!

The screen dropping resistor for the 807 final measured about five inches long, rated at 50 watts, covered with some sort of vitreous enamel, and worked well.

It may be old hat, but over all we had fun. Those were the days when it was "real amateur radio" at its best.

I have moved into the electronics explosion with more headaches and less money in my pocket.

The article was most interesting. Try a few more.

Kevin M Doherty VK5EP
22 Railway Tce
Hove 5048

Morse Debate

Congratulations to Bob VK2GRY on his letter regarding "Is Morse Necessary Any More?" There is a similar debate currently "raging" on Packet BBS Bulletins, and I fully support his views.

It is very easy to become emotional and not remain totally objective. CW has its place on our bands, and I suggest always will. However, to make this the sole means of entry to HF is archaic, to say the least. Please try to remain objective while reading the following proposal:

The proposal is to simply have a multi-choice of subject type of exam, including CW, with each subject chosen worth so many points and each class of licence being worth so many points. This system would allow the aspiring amateur a choice of subjects of interest. I would go even further by saying that any subjects chosen require as much study time as CW does — ie, say between 30 to 100 hours of study each. That way we would eliminate the undesirables (ie, the Good Buddy type from you-know-where!).

It's 1992, not 1932. How about moving with the times with an innovative type of examination. That might even reduce the "Reciprocal Licensing" problem. We could go one step further, and perhaps turn this type of licence into a "World Amateur Licence" acceptable to all countries.

These are all ideas "pinched" from ideas floating about on the Packet BBS Bulletins, and I make no claim to them being my own original ideas.

There is a real threat of losing some bands — I see this as one way of populating them before they are gone forever. Let's keep any debate on this issue objective.

Peter Whellum VK5ZPG
PO Box 317
Willunga 5172

Proposal for Change of Name

I refer to several letters which have suggested a change of name. The Wireless Institute of Australia (WIA) has the distinction of being the oldest organisation of its kind in the world. The word "wireless" is synonymous with the early development of what we now prefer to call radio, and the word, as used in our name, provides a historic link with that early development.

The Wireless Institute of Australia is an established name well recognised by radio amateurs and by other communications organisations and authorities throughout the world. Its name ranks with that of other similar organisations such as the RSGB and ARRL. Surely no one with any connection with amateur radio could have any doubt as to the function of these organisations, independent of whether the words "wireless" or "radio" are used in their name.

Not to mention the cost and inconvenience incurred in changing letterheads, office records, badges, personal QSL cards and who knows what else, deletion of the word "wireless" severs the reference to our historic beginning. Personally, I would be dismayed if the name were changed.

Lloyd Butler VK5BR
18 Ottawa Av
Panorama, SA 5041

WICEN

It was interesting to read, in response to my earlier criticism of WICEN (NSW) Inc, a reply from that body's State Co-ordinator. This was chiefly notable for the irrelevancies it contained, such as the alleged age group of WICEN critics, and references to my past association with Waverley ARC. His claim regarding the former is certainly not borne out locally, and the significance of the latter, whatever views his visit to that club may have elicited, escapes me.

It is gratifying that Mr Greentree deplores the amount of publicity given to minority groups. WICEN (NSW) Inc, with a membership of 270 in a State having an amateur population of 5000, is a case in point. Perhaps he hopes to see memberships mushroom. He is certainly lavish with his application of fertiliser.

My protests have not been aimed at the motivation of WICEN members, but at attempts by its officials to restrict emergency communications to WICEN control, and to intimidate amateurs — especially newcomers — into believing they face penalties for participating in such communications unless members of that body. This is wrong and misleading.

Every interested amateur should weigh the needs of his local rescue organisation/s against those of WICEN and act accordingly.

S V Ellis VK2DDL
82 Taree St
Tuncurry NSW 2428

Personally Speaking

Our claim to be the only effective bargaining unit for Australian amateurs is not winning new members. Why do we persist? We might be alienating many potential members who prefer to speak for themselves.

I will speak for myself, thank you, it is a habit I find hard to break. If I disagree with a WIA/DoTC proposal, or if I have an opinion which I want to communicate to the Minister, I will do that through my MHR. That is my usual practice.

If diverse views are suppressed or "politely and effectively ignored" because of WIA council and DoTC collusion, both parties are guilty of discreditable conduct, conduct which erodes the foundations of a free society. I know it is a common practice, but that doesn't make it right.

"Join the strength" are the catchwords. Where is the strength in a body which is supported by less than 38 per cent of the people it claims to represent? The 11,000 non-member majority is not impressed, neither are the 1000 who have deserted us since 1987.

We must abandon our querulous octogenarian pleading for support, and develop a new and original personality. We could become a real learned society, a society respected by the modern young adults with their advanced technical awareness and literacy; they will all have technical education beyond year 12 by 2000. We are getting nowhere catering for the primary school level minority.

The Herald-Sun of 10 August reported the following extract from a speech by Sir Arvi Parbo: "May I make a plea against the creeping intolerance of expressing a diversity of views which goes under the label of "political correctness".

Lindsay Lawless VK3ANJ
Box 112
Lakes Entrance Vic 3909

Contests

Results of WIA 1992 Novice Contest

Ray Milliken VK2SRM Novice Contest Co-ordinator

This year's contest attracted 47 entries, with 34 in Section A (phone), 13 in Section B (CW), with no entries being received for Section C (SWL).

Logs were generally of a high standard, with very few incorrect or duplicated entries recorded.

The Keith Howard VK2AKX Trophy will be awarded this year to VK2JSK for the highest aggregate Novice score.

The Clive Burns Memorial Trophy for the Novice entrant with the highest CW score has been awarded to VK4VHN.

Both of these perpetual trophies are held on permanent display at the Executive Office. In each case the winner will receive a suitably inscribed wall plaque.

Section A Novice Winner	VK2JSK
Section B AOCP Winner	VK3BML
Section B Novice Winner	VK4VHN
Section B AOCP Winner	VK3EFO
Section C SWL No entrants	

WIA 1992 Novice Contest Winners

VK1KLB	Lawrie Brown
VK2AFO	Dale Cavies
VK2BML	Ballarat Amateur Radio Group Inc
VK2JSK	Peter Hodgins
VK2MJV	David Marks
VK3APC	Moorabbin & District Radio Club
VK3EFO	Albert Stevens
VK3VFK	Gordon Haywood
VK4MWK	Bernard Terry
VK4VHN	Clayton Hansen
VK5AYD	David C Young
VK5MAP	Angus Meier
VK6LL	Andrew Hartley
VK6NTJ	Terence J Javens
VK6XG	Andy Russell
ZL2LOW	Chris Lowe

Individual Scores — Section A — Phone

VK3BML (c)	1052
VK6XG	999
VK3APC (c)	931
VK5AYD	842
VK2JSK	811
VK4MWK	785

VK6LLL	758
VK3VFK	680
VK3GH (c)	540
VK5ATU	538
VK2MJV	525
VK7SHV (c)	489
VK5MAP	452
VK4MSO	435
VK5NRC	420
ZL2LOW	365
VK5PMC	329
VK2WO	274
ZL1AGO	232
VK4KJD	211
VK2GJS	209
VK1BR	208
VK6NWK	194
VK4NGA	155
VK2FUH	144
VK1KLB	143
VK6APK	136
VK5KCX	130
VK1PBT	112
VK2ATZ (c)	108
VK8AV	89
VK2MKL	72
VK2STD	69
VK6BWI (QRP)	28

Individual Scores — Section C — CW

VK3EFO	116
VK4VHN	107
VK5AFO	78
VK5AGX	77
VK6NTJ	74
VK3XB	71
VK2SPT	68
VK2AZR	53
VK2PIF	49
VK3KS	46
VK5NRC	26
VK2GJS	19
VK8AV	12

Additional Certificates Recommended

For the highest aggregate Novice score for each state, excluding national winners.

VK1KLB, VK2MJV, VK3VFK, VK4MWK, VK5MAP, VK6LLL, VK7 No entrant, VK8 No entrant

Other Special Awards Recommended

Section A

VK6XG, VK3APC, VK5AYD, ZL2LOW

Section B

VK5AGO, VK6NTJ

Comments

This year's Novice Contest was quite a success, even after a mix-up with the dates. However, after perusing the logs, I noted that there were a few operators who would have had reasonably good scores, but no logs were received from them.

Some contestants were confused as to the scoring for the Novice/Combined call, which is five points.

Comments from across the Tasman were that there was very little promotion of the contest in NZ. I hope this situation can be corrected in the future.

There was only one late log and that was from VK6ANC.

Finally, I would like to thank all the participants in this year's contest and hope to hear from you next year.

Sunshine State Jack Files Memorial Contest — Results 1992

Ted Mulholland VK4AEM
PO Box 35
Caloundra 4551

Section 3b Stations within VK4, TX HF Phone

VK4AVR	760	VK4JJB	336
VK4AKH	625	VK4KFQ	312
VK4OR	607	VK4BAY	304
VK4NE	585	VK4PJ	276
VK4IS	424	VK4PVH	272
VK4KJD	166		

Section 3e Club Stations, TX, HF Phone

VI4AAF 372

ar

Pounding Brass

Gilbert Griffith VK3CQ 7 Church Street Bright Vic 3741

By definition, morsiacs are supposed to be old-fashioned and conservative. Brasspounders are usually looked upon as those old timers who have the magical ability to build a transmitter using valves or even tap out a distress call on a ship's hull with a spanner as portrayed in at least one famous movie. Many of us will recall stories of messages sent by banging on the water pipes, or some genius building a secret prison-camp radio transceiver from scrounged parts. Some of them even true.

Today most Amateurs would recognise CQ if you beeped it on your car horn, but how many could use Morse to save their own life? Even though it was forced upon me as part of qualifying for a ticket, I am glad that I can.

I don't consider myself overly conservative, I have a couple of computers and packet on VHF and have even had a "go" at aircraft enhancement mode at one time. I don't consider any facet of our hobby to be "better" than another. Some may be more interesting to some of us, and some may seem ridiculous to some, so there is always plenty of hot debate flying around.

If you are fortunate enough to have packet in your shack you will have noticed the Morse debate has been on again for the last few months. A debate which should probably be called an argument between those who don't use it and don't want to, and those who do and want to stir up a little action.

The whole debate is to me an entertaining waste of time, mainly because the regulation requiring Morse is international and not subject to local preferences. Furthermore, some of the most outspoken opponents to code requirements can change their colours when given the right incentive, and when they find out how much fun they have been missing.

Still, many ideas come about through the idea of "progress" and dropping Morse is just one of them. Another idea recently promoted through the "Over to you" column in Amateur Radio (July), is a proposal that the name "Wireless Institute of Australia" is outdated and unsuitable, and that we should change it to "Amateur Radio Institute of Australia". This doesn't make me want to sing, quite the opposite in fact. The following month another name was suggested, "Australian Institute of Radio Amateurs" which would be OK, I guess, if all amateurs in Australia were members.

Various reasons for a change were given, mainly that it is difficult to explain to non-hams what wireless is, etc. Or that wireless is old-fashioned. We could, I suppose, come up with equally relevant suggestions like "Radio, Television and Computer Hobbies Club" or "Morsiacs Anonymous" if we wanted, but why should we want to change a name?

Maybe because the American Amateurs are thinking about changing the ARRL name to the AARL, should we copy them? Do some people really think that changing a name will make our hobby easier to understand, or more attractive to the masses, ha?. I shudder at the thought of the cost of changing all the badges, logos, QSL cards, letterheads that have been fairly consistent for years. We have the oldest radio society in the world and should be proud of the name and of the past members who formed the Institute and gave it its name. It is not the fault of the name, but of our inability to explain, to sell the hobby, that requires change. Let those who want a different name start their own institute. This too has been tried.

ar

Spotlight on SWLing

Robin L. Harwood VK7RH 52 Connaught Cres West Launceston Tas 7250

I have received news that a major international broadcaster changed its title on the first of this month. Radio Beijing has been the title of China's external broadcasting service, ever since the Chinese Revolution of 1949. Now this station is reportedly now known as Radio China International. The title of Radio Beijing is being kept for the domestic radio programming within the city.

The Southern Cross DX Club Inc in Adelaide has kindly forwarded me a sample copy of another of their publications. It is called "The Australian Long Wave Radio Guide" and has been mainly compiled by Peter McMillan together with John Smith, who is the Utilities Section Editor of "DX Post". The cost is $2.50 postpaid anywhere within Australia, and outside of Australia please add four IRCs for postage. The guide covers from 200 kHz to 500 kHz, mainly covering non-directional and locater beacons used by aeronautical and maritime services, although I was surprised to learn that several spot frequencies are used in underground mining for radio communication. These are extremely low powered and do not apparently interfere with other users.

If there is a fault with the Guide, it is that it does not give the frequencies of the stations below 200 kHz such as Omega plus the US Naval Communications Base at Northwest Cape (NWC). True the number of services below 200 kHz can be counted on the fingers of one hand, but it would have been handy to have them included. Also some callsigns of the NDBs were altered prior to the publication. For example "DV" at Devonport (TAS) on 281 is now signing as "DPO". Similarly "WY" in Wynyard (TAS) on 302 kHz signs as "WYY", Laverton (VIC) on 344 kHz is now "LVT" etc. Yet despite these small errors, I find this small publication very useful in assisting me to identify these beacon stations.

Recently the Australian Army Signals closed down their HF facility — VMA at Digger's Rest in Victoria, after 50 years continuous service. To commemorate this occasion, the Unit mounted a special 14 day operation on USB on various HF channels to allow SWLs and DXers throughout the World to log the station before it went QRT on August 25th. I believe that many hundreds of reports were received and are being processed.

Summer Time

This month also sees the re-introduction of Summer Time in New South Wales, Victoria, Tasmania and South Australia. Tasmania will be slightly different with six months of summer time from 3rd October 1992, to the last Sunday in March 1993.

Queensland has opted out of Summer Time, as has Western Australia.

The Kiwis begin their Summer Time on the second Sunday of this month until the second Sunday in March 1993.

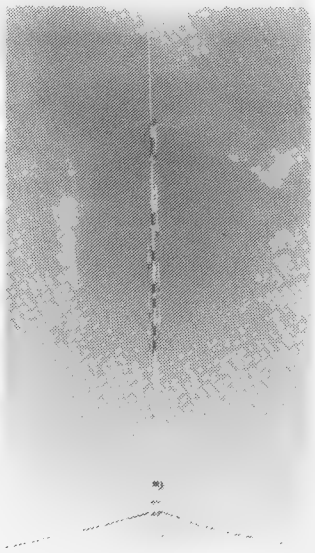
Well, that is all for this month. Until next time, the very best of listening and 73 — VK7RH.

AR Showcase

Cushcraft AP8A Vertical Antenna

Cushcraft has introduced the next generation of its eight-band quarter-wave vertical antenna.

The 26-foot AP8A covers 10, 12, 15, 17, 20, 30, 40 and 80 metres and weighs only 9.5 pounds.



Constructed with double and triple-wall tubing, the AP8A provides uncompromising strength for high wind survive-ability. Low-loss design and high efficiency trap adds up to maximum output.

Today's active amateur will get superior eight-band operation with automatic band switching in one compact package. With quick assembly and a clean profile, the rugged AP8A will provide years of pleasure for amateurs and SWLs alike.

APR18A Radial Kit

The Cushcraft APR18A radial kit is the perfect companion for the new quarter-wave AP8A, or any quarter-wave amateur HF vertical.

This economical kit provides maximum performance from your quarter-wave vertical and consists of only nine multiple and single-conductor radials, with a maximum length of only 31 feet — far less than the 75 feet length required with handmade radials.

The APR18A kit is convenient to use for permanent or portable operation, and it comes complete, ready for quick installation at either ground level or rooftop applications with no measuring or cutting.

Enquiries on pricing and supply for both of the above items may be directed to: Stewart Electronics Components Pty Ltd, 44 Stafford St, Huntingdale Vic 3166. Tel (03) 543 3733. Fax (03) 543 7238. ar

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The IARU HF Beacon Project

Kevin Olds VK1OK 238 Southern Cross Drive Latham ACT 2615

Why HF Beacons?

For most Amateurs, this is probably an unnecessary question, but the answer is worth reviewing anyway. Beacons are used primarily as a means of determining whether radio signals can be received from a particular geographic location. Most of us are familiar with the use of VHF and UHF beacons for precisely this purpose within Australia. VHF beacons, especially those on 50 MHz are used by experienced operators to determine likely propagation conditions from their QTH to the area of interest.

In exactly the same way, we can use HF beacons to determine whether the band is open to a particular location in which we have an interest. For best results, this would require beacons in each HF band and in most countries in the world and could quickly occupy all available HF band space, just for beacons.

But imagine also being able to use an HF beacon to provide an "in-band" time and frequency standard, or as a means of comparing the performance of different antennas, receivers or just checking ionospheric predictions. These thing can also be done with current HF beacons as we shall see.

The NCDXF Beacon

What Is It?

The NCDXF Beacon was developed by the Northern California DX Foundation (NCDXF) for the international 14.1 MHz beacon project. This network of beacons has been operational for many years now and was originally established by the NCDXF. The Beacon is a frequency-sharing, time-sharing and power-stepping beacon and represents a very efficient usage of today's scarce RF resources. The overall beacon transmitter concept and RF power-level switching was designed by Dave Leeson, W6QHS. Jack Curtis, K6KU designed the clock, the microprocessor and the programming components of the original beacons. The original network comprised eight stations in New York, California, Hawaii, Japan, Israel, Finland, Madiera Island and South Africa.

What Does It Do?

An NCDXF beacon has a set transmitting pattern that contains identification and transmitter power level information. These beacons are co-ordinated worldwide to transmit in sequence, all on the same frequency. The transmission sequence is repeated regularly (currently 10 minutes). Thus the requirements of a time-sharing, frequency-sharing and power-stepping beacon are met.

The beacon transmits CW at 20 wpm in a fixed format as follows:

Power Level	CW Message
100 W	QST de ⟨callsign⟩ beacon
100 W	. _____ (9 second dash)
10 W	.. _____ (9 second dash)
1 W	... _____ (9 second dash)
.1 W	.... _____ (9 second dash)
100 W	SK ⟨callsign⟩

This transmission takes approximately 58 seconds from start to finish. Beacons are set to commence transmission at the start of their allotted minute. Note the power stepping in 10 dB steps.

What Do We Get From It?

As well as monitoring, these beacons can also provide an "in-band" time and frequency standard. The transmitter frequency can be locked to a suitable reference as can the start time of the transmission sequence. With the long dash transmissions, we have adequate time to compare antenna and receiver performances, both short range and DX performance, depending on the beacon(s) chosen for the experiment.

In addition, the stepped power levels can enhance studies of propagation forecasts. The beacons can also act as a lesson to the high power merchants. Observations show how often the 1 Watt part of the transmission can be consistently and reliably read.

The Multi Band Beacon — W6WX/B

Developments of the NCDXF Beacon

Since its first development in the early 1980's, developments of the NCDXF beacon have continued. These developments have occurred in three major areas:

Transmission Time.

The length of the transmission can be varied. For example, it is possible to have each beacon transmit its call followed by a long dash at each of four power levels in a 10 second time slot. It would therefore take 12 world wide beacons just two minutes to identify and send their message in rotation. This is a fast observation of round the world propagation. The one minute format detailed above can also be used, either alone or in combination with the shorter transmission to provide better coverage.

Beacon Timer. The beacons time clock can be automatically set if WWV or WWVH can be received at the transmitter site. The Clock can be set based on a certain signal sequence from the time reference and thus prevent time drift of individual beacons. it can also be used to reset the clock after a power failure, thus removing the need for human intervention.

Band Coverage.

The beacon can be readily programmed to transmit, in sequence, on any band covered by the transceiver. The cost of this is negligible.

Three Band Operation

Enter W6WX/B. This beacon, located in California, transmits on three bands, in sequence and can be readily tracked by the user. Immediately after it has sent its one minute transmission and signed off on 14.1 MHz, it switches automatically to 21.15 MHz (the 21 MHz band beacon frequency) and sends its one minute message again. It then switches to 28.2 MHz and sends the same message there. A listener can follow this sequence by quickly switching his receiver and thus gain an interesting comparison of propagation over three bands from the same beacon, an economical way of serving three bands.

Extension to Five Band Operation

As was noted above, extension of the beacon to five bands, 14, 18, 21, 24 and 28 MHz is a straightforward exercise. All that is required is for beacon frequencies to be established on 18 and 24 MHz. Recommendations to the IARU on the establishment of such frequencies were made at the IARU Region III meeting in Bandung in October 1991. Once they are established, the concept of rapid, 5 band determination of propagation to any area in the world becomes a reality.

The International Beacon Project

Aims

In 1986, the Administrative Council of the IARU revised the guidelines for the future development of IARU sponsored HF beacons. The aim of the guidelines is to introduce modern techniques into beacon systems to make them as efficient as possible, both in their operation and the use of the frequencies allotted to the Amateur Service. While the Administrative Council resolution was aimed at the 28 MHz band, the concepts apply just as readily to the other HF bands.

The position of International Beacon Project Co-ordinator has been established by the IARU to oversight and co-ordinate the implementation of the guidelines and establish an international set of co-ordinated beacons on the HF bands.

The NCDXF beacons detailed above have all the desired characteristics of a good HF beacon and are being used as the models

for the International Beacon Project.

Transition Period

In the past, either under Regional Band Plans or by tacit action, 28 MHz beacons have been set up between 28.2 and 28.3 MHz. The 1986 resolution calls for the beacons segment to be reduced to 28.19 to 28.225 MHz, with beacons in the old segment to be phased out by 1 January 1993. Full IARU recognition will only be given to beacons which meet the new technical specifications to be drawn up by the IBP International Co-ordinator. New beacons should be built to this standard and existing ones can be recognised by being upgraded to the new specifications. Interim recognition will be given to those stations in the process of satisfying the requirements. In all cases, beacons will have to be sponsored by the appropriate national member society.

Frequency Plan — the Three/Five Band Network

On the 21 MHz and 28 MHz bands, it has been decided to follow the successful example of the 14.1 MHz network established by the NCDXF. The frequencies involved are 21.15 and 28.2 MHz. Beacons will be three band units, similar to W6WX/B, transmitting sequentially in frequency as well as time. In this way it will be possible to compare the propagation on the different frequencies from the various locations which themselves will give worldwide coverage.

When the 18 MHz and 24 MHz beacon frequencies are sanctioned, these bands will be added to the network to give five band coverage of the beacons. The proposed frequencies for these bands are 18.110 MHz and 24.930 MHz.

Frequency Plan — the Regional Networks

The Three/Five Band network, by virtue of its single frequency and time sharing operation will be limited in terms of the number of stations it can support and hence its geographic coverage, especially when compared with the current number of beacons operating on the 28 MHz band, albeit mostly on low power. Therefore it is planned to make provision for regional networks on the 28 MHz band. Each network will comprise up to 15 stations, using NCDXF style beacons on a single frequency. This arrangement will allow operators looking towards a particular area of the world to choose the appropriate frequency and thereby have the chance of more frequent observations.

These regional networks are limited only by the imagination. IARU Region II is already considering a regional network involving North and South America, all on a single frequency. Beacons transmitting in sequence from South America would be followed by beacons from North America, and then the cycle would repeat.

Also being considered is an east and west coast network. A string of east coast beacons would extend from Greenland, through Canada, US, Bermuda, the Caribbean Islands, thence down the east cost of South America. These beacons would be keyed in sequence. On another frequency would be a network with a string of stations from Alaska, Canada, US, Central America and on down the east coast of South America. Two networks such as these, with only three or four beacons on each coast of South and North America, could provide a very comprehensive worldwide picture of what is happening on 28 MHz in the Americas. More beacons could be easily added as required. If the two frequencies were only 1 KHz apart, a receiver with no filter could copy both strings of beacons at the same time, if the band were open.

Summary

The IARU International Beacon Project, when complete, will provide a spectrum efficient global beacon network that will allow Amateurs to readily determine propagation conditions from their QTH to anywhere in the world. Even now, and during development of the network, many of the aims of the project can begin to be realised.

References

The IARU Beacon Project, Letter and Attachments, Document 91/VIII/71 to the IARU Region III Conference, Bandung, Indonesia, October 1992.

Worldwide Beacon Net: The Possibilities Abound, QST, June 1983.

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TRY THIS

A New Antenna Design . . . in the Year 1927

Emil Geles, a Roumanian then living in Bucharest, was granted a UK patent for an antenna he had invented and described in his written application dated 24 March 1927.

Present-day radio amateurs may wish to experiment along similar lines. Brief details of the invention follow, although information concerning the optimum size of the device was not provided.

The antenna, in three variations as shown in figures 1, 2 and 3 at right, consists of a metal tube inside which, throughout the length of the tube, is a wire which is insulated from the inside surface of the tube. The wire is either: joined to the tube at the top (fig 1), joined electrically via a capacitor (fig 2) or isolated (fig 3). Geles was of the opinion that the isolated version would suit most applications.

The RF energy is applied between the tube and the wire which, according to the inventor, not only eliminates the need for earthing or a counterpoise but, because radiation from the wire is prevented by the surrounding tube, prevents distortion of the field. Radiation of course occurs from the outside surface of the tube due to RF skin effect.

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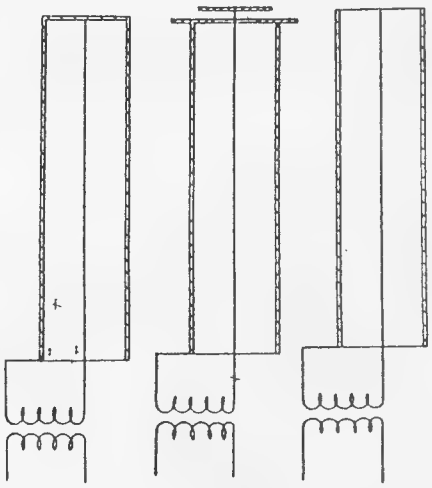

Fig.1. Fig.2. Fig.3.

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"Radar Yarns", plus "RAAF Radar in WW2, Pictorials I and II"

Reviewed by Colin MacKinnon, VK2DYM

To commemorate the 50th anniversary of the introduction of radar to the RAAF in World War 2, Ed Simmonds, Norm Smith and Morrie Fenton, all ex-RAAF radar personnel, have produced several very interesting publications. The first in the series is "Radar Yarns" which contains a brief history of RAAF ground radar, and a most interesting compendium of anecdotes and experiences from participants. These eyewitness accounts give a new understanding of the difficulties the men and women faced in getting radar into the field and operational, often actually behind enemy lines. Maps are included to show where the manv stations were located. "Radar Yarns" consists of about 230 pages in A5 size.

Whilst "Radar Yarns" has some photos, the next two books in the series are priceless for their photographic documentation of Australian ground radar stations. "Pictorial I" has around 150 photos covering overseas radar stations, ie those that were located in the islands

north of Australia, plus photos from early radar and radio schools.

"Pictorial II" also has about 150 photos, but of mainland stations and personnel etc. When you consider that cameras were forbidden in wartime, and radar was the most secret of secrets, it is amazing how many photos have surfaced! It is very fortunate that the Aussie aversion for rules prevailed, because very few official photos exist, and the unofficial photos in these two Pictorials provide the only available record of the outstanding efforts of the RAAF ground radar crews, the Army guards, the technicians, the mechanics and the cooks! The Pictorials are both A4 size, and around 70 and 90 pages respectively.

A fourth book is planned for later this year, giving technical details and photos of the various radars used by RAAF ground forces. This will include the locally designed AW and LW/AW sets as well as the sets that were imported, such as the UK CHL, ACO etc, and the little known use of USA gun laying SCR-268 and early warning SCR-270 sets. Information is still being sought on all of these sets.

The three books produced to date were a very limited print run of 500, but some may still be available at $24.00 each including post, from: C MacKinnon VK2DYM, 52-54 Mills Road, Glenhaven NSW 2156. **ar**

Try This — Home Brew Trimmers

Paul Clutter VK2SPC 52 Keats Av Bateau Bay 2261

In the process of building a selective preselector, I needed a couple of trimmers, controllable from the front panel. I decided it would be quicker and cheaper to make my own, but needed some kind of bearing/bush to hold the rotor shaft. the junk box offered nothing, but my box of miscellaneous plugs, sockets etc, came to the rescue. A panel mounting RCA audio socket was exactly right as a 1/8" (3.5 mm) diam rod its through it with just the right tension. The centre conductor can be tightened if necessary, with a pin or pointed tool or, if you have a few sockets, select as required — they vary. If the shaft is longer than about three inches (7.5 cm), two sockets would be better to stop the vertical and/or horizontal movement when tuning (see Fig 1).

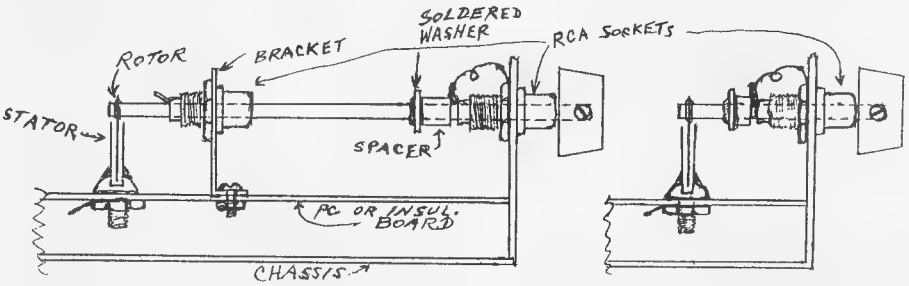


Figure 1 RCA Socket — Panel (screw mount) cat no P1430 — Dick Smith.

Making and Mounting the Trimmer Plates

Take a 1/8" or 5/32" brass screw (round head) and increase the width of the slot with a hacksaw or needle file. After cutting the plates from thin metal (I used a tin can) of your own shape etc, align them (2) in the slot of the screw head and wedge them in with a piece of cardboard. Solder the outsides to the screw head (see Fig 2). Adjust end play of the rotor shaft with spacers and/or washers to keep the rotor plate in the centre of the stator plates. Finally, solder the centre conductor tab of the RCA socket to chassis for a good rotor contact. **ar**

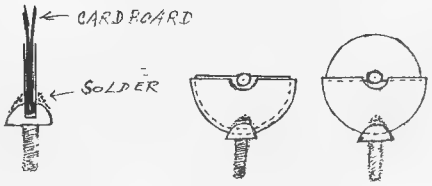


Figure 2 Expanded View of Trimmer.

Early Days of Television

H Karl Saville VK5AHK 2/1290 North East Road Tea Tree Gully 5091

When I think of it now, it does seem such a long time ago. It was 1934 and Doris and I had been married the year before. I had been very interested in radio and now Baird was transmitting television test programs from the BBC transmitters. It was a low definition system, 30 lines at 12 frames a second. I did not keep any records of this exercise at the time, so have to rely on my memory, although I have checked out the dates of the various stages of television progress mentioned below.

Baird had been experimenting with television since the early "20s, as had Jenkins in America and others in various countries, but these systems used mechanical scanning.

The modern system had already been worked out in 1907 by the Russian, Boris Rosing, and an Englishman, A A Campbell Swinton, who independently suggested the use of electron beams for the reconstitution of the image at the receiver.

In 1911 Campbell Swinton suggested, for a television camera, the use of a photosensitive mosaic which would accumulate electric charge and be discharged by a moving cathode ray.

This concept was realised in practice by the American Zworykin (who had studied under Boris Rosing) who applied for a patent for the Iconoscope in 1925.

P Nipkow, in Germany, had taken out a patent for transmitting and receiving an image over a single communication channel in 1884. He used a mechanical scanning device, a rotating disc, which bears his name.

Do it Yourself?

As I mentioned earlier, I was very interested, so decided to make a television receiver. There was a design for one in one of the wireless magazines, which used a Nipkow disc for the scanning, and I decided I would make one up to this design.

The vision signal for a 12-frame 30-line system works out at about 10,000 cycles or, as we say today, 10 kilohertz, and this signal was transmitted by the BBC on one of its national audio stations. The television audio signal was sent out on another station.

The BBC arranged for tests by the Baird system to be carried out each evening from 11 to 12 o'clock.

The main item in the receiver was the disc, and here I was fortunate, because Doris' father was the Production Engineer at the Chiswick depot of the London General Omnibus Company, as it was then known, and I managed to get him interested enough to get it made for me.

The specifications called for 30 concentric circles to be inscribed on a 24-inch aluminium disc. They were equally spaced at 0.028 inches, the largest one being one inch inside the edge of the disc.

The next operation was to draw 30 radii at 12-degree intervals so the disc was divided into 30 equal segments.

Starting from the outermost circle, a 0.028-inch square hole was punched at the intersection of a radius and circle, then one for the next radius and next inner circle, and so on, spiralling inwards until all 30 intersections have a hole punched into them.

The square holes were arranged so that as the disc turned, the outermost hole would scan the right-hand side of the picture from top to bottom against the modulated light source in a 0.028-inch- wide path. As the first hole left the picture area the second hole, 0.028 inches further in, would scan the next 0.028 inches to the left of the first scan. And the rest of the holes would scan in a like manner until the whole picture area had been covered.

One complete rotation of the disc completes one frame, and as there are 12 frames per second, the disc has to rotate 12 times a second to keep in step with the transmission.

Apparently it was a very tedious operation making the disc and I was told afterwards that the workman who made the disc needed eye treatment later! We now had the disc and the next thing we needed was a gas tube which was modulated to provide the picture illumination. I think I got one from Baird for a small sum.

Synchronisation

In addition to the disc I needed a synchronising device which consisted of two electromagnets acting on an armature attached to the shaft on which the disc was to be fixed. Also a motor was needed to rotate the shaft, and a lens system to magnify the very small picture which the system produced.

The tests on the radio did not last long, and the making of my receiver had taken longer than I expected. Time was running out, and I was never able to fit a motor to drive the disc and also to fit the synchronising equipment, but we made do with what we had and did see the television pictures.

Ever resourceful, I took the handle and gearing off Doris' sewing machine and managed to fit it to the Nipkow disc shaft and arranged to turn the disc by hand.

I connected the gastube to the output of my high fidelity amplifier and tuned into the BBC station with the video signal on it, and turned furiously on the sewing machine handle.

It was not easy to get the picture into synchronisation. In fact, it was very hard, and harder still to keep it steady. The picture went into all shapes. First I would have two pictures, then four or more, and, if I was lucky, one picture, and all the while there would be about six other big fat heads trying to see the little picture that could, or might, be seen through the rotating disc against the flickering gastube. We did not have any lens to build up the picture, it was just as seen through the 30 0.028-inch rotating holes on the disc.

I can remember seeing the eight stepsisters dancing, and when you consider the system used vertical scanning of 30 lines, each of the dancing sisters would have been produced by 30/8, or nearly four lines.

My set-up was not very good, and often by the time we had everything set up the one-hour program would be finished and we might be just in time to see the final curtain come down with GOOD NIGHT written on it.

In the meantime Baird had been working on an all-electronic television system, and by the time he was ready to broadcast in 1935, EMI also had a rival system to test, and the BBC arranged for Baird and EMI to transmit on alternate evenings so comparative tests could be made.

It is history now, but EMI proved to be the better, technically, of the two, and was officially adopted by the BBC when it started television broadcasts from Alexandra Palace in 1936.

Non-Radiating Tune-up Unit

Karl Saville VK5AHK 1290 North East Rd Tea Tree Gully 5091

I was prompted to offer this project to your readers after reading an article by Peter Phillips VK2EPP entitled "Transmatch Tuning Noise Bridge" which was published in AR September 1991. This simple tune-up device is easy to build, simple to operate but, more importantly, won't annoy other amateurs whilst you go through the tune-up process.

The tune-up device simply connects between your transceiver and your antenna system. It can remain connected into the circuit permanently; it's as simple as switching to tune, adjust the ATU then switch to operate. This procedure ensures you don't blow up the final transistors in your favourite solid state rig due to a high VSWR, as you don't know if a 3:1 VSWR represents 150 ohms or 17 ohms. One-hundred-and-fifty ohms may not cause damage, but 17 ohms might. If you are an experimenter in antenna systems, this device could save you a lot of problems.

Description

One section of the two-pole two-way switch connects the transmitter to a 50 ohm dummy load mounted in the tune-up unit; R2 is the reference arm of the RF bridge. The other section of the switch connects the ATU and the antenna to the bridge unknown termination. The output of the transmitter passes through a small toroid along a piece of coaxial cable to the changeover switch. This forms the primary winding of the transformer which couples RF energy to the generator arm of the bridge via a six-turn secondary winding.

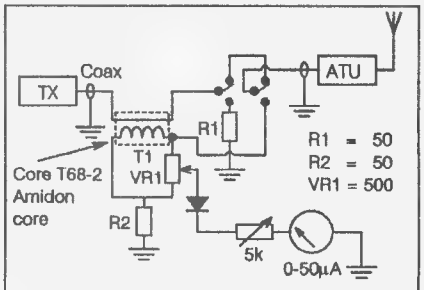
Initial Set Up

Use a separate 50 ohm dummy load in place of the ATU and antenna. Switch to tune-up and adjust the balance potentiometer until the meter reads zero with a small amount of power from your transmitter. Mark this position as 50 ohms. Now replace the external dummy load with your ATU and antenna. Again apply a small amount of power. The meter should read zero to indicate the antenna system is 50 ohms. If it does not, adjust the ATU until a zero reading is obtained.

Calibrating the meter

After the unit has been set up to 50 ohms, the meter can be calibrated to indicate relative SWR. Place a non-inductive 100 ohm resistor in place of the antenna and ATU, power up the unit and mark the 2:1 SWR position. Next use 150 ohm to mark 3:1 and 200 ohm for 4:1. Depending on the meter you have available, it may be necessary to include a series trim pot in the meter circuit to reduce the sensitivity before SWR calibration.

The unit should be mounted in a metal box to reduce RF radiation. Once your unit is completed, tuning up is a simple matter. Switch to tune, adjust the system, then switch to operate — that's all there is to it. Most of the parts required can be found in the junk box, but be sure to use a good quality switch for the changeover switch.



T1 is a toroid with 6 turns and the TX output cable forms the primary.
R1 is the dummy load and must be large enough to carry the load.

Prevent pirates — make sure you sell your transmitter to a licensed amateur.

Morseword 67

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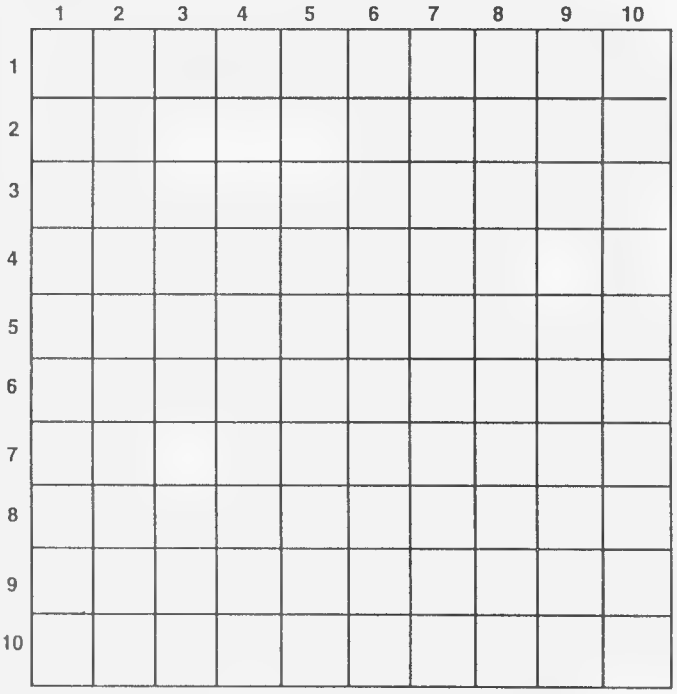

Across:
1 Set of rooms
2 Stern
3 Sovereign
4 Scene
5 Certain
6 Mist
7 Passenger
8 Sudden blast
9 Harden
10 Shakesperian king

Down:
1 Rind
2 Not right
3 Lose colour
4 Jeer
5 Escape
6 Cornet
7 Old form of have
8 Not against
9 Grill
10 Finished

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HAMADS

TRADE ADS

● AMIDON FERROMAGNETIC CORES: For all RF applications. Send business size SASE for data/price to RJ & US Imports, PO Box 431, Kiama NSW 2533 (no enquiries at office please ... 14 Boanyo Ave Kiama). Agencies at: Geoff Wood Electronics, Sydney: Webb Electronics, Albury: Assoc TV Service, Hobart: Truscotts Electronic World, Melbourne.

● WEATHER FAX programs for IBM XT/ATs *** "RADFAX2" $35-00, is a high resolution shortwave weatherfax, morse and RTTY receiving program. Suitable for CGA, EGA, VGA and Hercules cards (state which). Needs SSB HF radio and RADFAX decoder. *** "SATFAX" $45-00, is a NOAA, Meteor and GMS weather satellite picture receiving program. Needs EGA or VGA & WEATHER FAX PC card, + 137 MHz Receiver. *** "MAXISAT" $75-00 is similar to SATFAX but needs 2 MB of expanded memory (EMS 3.6 or 4.0) and 1024 x 768 SVGA card. All programs are on 5.25" or 3.5" disks (state which) plus documentation, add $3-00 postage. ONLY from M Delahunty, 42 Villiers St, New Farm QLD 4005. Ph (07) 358 2785.

FOR SALE NSW

● KENWOOD TS820S with external VFO handbook $550; HEATHKIT monitor scope $100; HEATHKIT audio generator $50; VARIOUS HF mobile whips from $30; 70CM long 39 el wide spaced Yagi $100; tel (02) 971 9795 VK2HL QTHR.

● DRAKE STATION T4XC R4C MS4 PSU, VG cond, Mic, Manual, Spares, $475; prefer exch for FT7, TS120V or similar. Max VK2GE (065) 855 732.

● YAESU FT211RH 2M 45w mobile txcvr, $350; WERNER WULF 6M-6el antenna $120, Blair VK2XFS (02) 971 8378.

● SWAN MK II LINEAR, has two 500Z valves, covers 80 to 10 m, loafs along at legal pwr limit. $1100; DISH for SATELLITE or microwave DX, 2M Diam, Solid construction with 10M 25mm HELIAX, $600; TOWER 70 foot crank up, tilt over, h/duty. $1000. C.McKinnon VK2DYM, 52 Mills Rd, Glenhaven NSW 2156. (02) 634 6259.

● HYGAIN TH7DXX $1000; HYGAIN V25 5/8 Collinear 2m vert, $150; HILLS 75ft 3 sect winch up guyed mast, guys, fittings, $1000; LOWER part HILLS 2 section mast (climbing rungs) 25 ft, $50; KENPRO KR2000RC HD rotator, cont, cable, $500; ATN 13-30MHz 8 el Log Periodic, $300; VK2ZZV SA270 Satellite ants, 2x20 el UHF, 2x12 el VHF crossed Yagis with f/glass boom, KR5400 az/el rotator, cont, suit auto tracking, $900; PHILIPS FM828 xtls 144.900 and 144.750 simplex for packet, EC, $150; STELMA DATA analysis group US Forces 1962, manuals, mobile stand, 240/110 V Tfrmr, $20; TELONIC Sweep Gen HD-1A, $20; SIEMENS 100 Series II Teleprinter, punch, reader, some docs, $20; ASTOR VM14S B/W studio monitor, GC, $20. John VK2CFJ QTHR (02) 457 9570 any time.

● COMPLETE AMATEUR STATION, SAE for details, VK2YN QTHR.

● CR5SS MULTI BAND VERTICAL trapped antenna, $200; VK2VMB (065) 686 754.

FOR SALE VIC

● LOG PERIODIC ATN 13-30-8 ex. cond, buyer to assist with removal. Try before you buy, $500 firm. Bob VK3AQK (057) 441 676 QTHR

● ALINCO DJ100T 2m hand held, EC, $250, Paul VK3CAB (050) 246 273 (A.Hrs).

● PHILIPS FM828 VHF HI Band, 10 ch, 25 W, Tuned to two metres, c/w Philips PSU, Mic, Philips Steel Rack to house both units, VGC, $350; YAESU FT712RH 70cm 35W Txcvr, in box, fitted with all options, incl new MMB37 mobile bracket, EC $510 ONO; DAVID VK3THY QTHR (03) 434 7152.

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● YAESU FL2050 2 Metres Linear Amp, S/N 11030043, $200 ONO, Jim VK3DPO (03) 857 5342.

● REALISTIC HTX100 10m mobile, 5/25W, SSB/CW, Perfect condx with 2CG mobile antenna to suit; $225, Derek VK3DD (03) 730 1557.

● KENWOOD TS530S spare valves and driver, $700; SP230 $120; AT230 $280; PWR/SWR meter model HS260, $40; ALINCO DR590 twin band mobile $800; Paul VK3EPD (059) 831 771

● HF LOG PERIODIC beam ATN 13-30, as new $500, A Styles, VK3TV RMB 2943 Benalla 3673.

● EX-SEC HD SELF SUPPORT GAL TOWER, height 119ft, base 20ft x 10ft, top parallel section 5ft x 5ft, catwalk 12ft x 5ft, weight 7 tons (+/−), internal gal ladder and cage, fitted with HD custom built rotator, torque device, 2ft diam disk brake, 3" masting and bearings, dismantled in four sections, on site price $8,500 ONO; John VK3HW QTHR (053) 32 4011.

● YAESU FT570DX, Ext VFO, desk mic, two new finals, in working condx, $400; Bill VK3DQS (03) 791 2947.

● IC751 with ext PSU, ex cond, $1800, Ian (057) 522 631 (A Hrs).

● ICOM MICRO2A 2 mx Handheld FM TXCVR, c/w Spkr/Mic, manuals, carrycase, beltclip, 12v converter pack for mobile use, spare battery pack, new condx, $250; REG VK3CCE QTHR (03) 509 1720.

● YAESU FAS-1-4R remote antenna selector to suit FC757 ATU, brand new, unused, $150; HYGAIN TH6DXX triband Yagi, needs some work, $275; Phil VK3IN (059) 622 832.

● C64 COMMODORE, 1541 disk drive, Packet module, AMTOR, RTTY and maintenance software, $450, RON VK3AEO (03) 707 3405.

FOR SALE QLD

● YAESU FT290R, Nicads, Charger, Soft carry case, $400 (S/N 2M220355); OSCILLOSCOPE SOLARTON type CT436, dual beam, $180; WESTERN PWR/SWR meter, Peak and RMS, 50 to 150 MHz, 5/20/200 watts, $50, Norm, VK4ZFQ, QTHR, (077) 79 4641.

● DENTRON CLIPPERTON LINEAR, new, never used, complete tubes, S/N 2157, $1,500, ask for Doug (079) 921 146.

● KENWOOD TS820S with sep VFO820, DRAKE filter, QUEMENT SWR/Pwr meter, Mic, Manuals, plus HB antenna tuner 10/15/20 metres, new finals just fitted, $550; VK4LD QTHR (075) 35 3491.

● YAESU LINEAR AMPLIFIER, instruction book, cables, nine mths guar left, S/N 8M180029, LICENSED AMATEURS ONLY, a gift $2,650, Bob VK4RM, (074) 497 151.

● TENTEC CENTURY 21, CQ/QSK txcvr, 80-10m, S/N 570-2182, $420; G2DAF LINEAR 160-15m, 2x813 plus spare and all parts for new PSU, $380; VK POWERMATE 5 Amp PSU, full kit, $50; F/GLASS QUAD spreaders $5-00 ea; DOC VK4CMY (076) 616 200, (076) 617 494.

FOR SALE WA

● DECEASED ESTATE of the late Fenton Sanderson (VK6TS), HYGAIN TH7 antenna, new still in imported wrapping; COMMANDER 2500 linear amp, new, unused; ATN aluminium three section tilt over tower with winch, guys, turn buckles and fittings (S/Steel hardware); 2 x 4" double steel pulleys with hooks; HEATHKIT capacitance meter; ICOM CW filter FL32; SHURE 444 desk mic; DATONG auto RF speech processor model ASP; HIGHMOUND CW key, marble base; 10 METRES TXCVR, converted BELCOM CB; REALISTIC tube control centre; prices negotiable, enquiries to Stan Kirby, VK6HP, 14 Parkhill Way, Wilson 6107 WA (09) 458 9793.

● ICOM IC27H 2 Metres mobile Txcvr 5W/45W, Mobile mounting bracket, cct diag, EC, DTMF subaudible tone encoder, S/N 07484, $400, John Farnan, VK6AFA, QTHR.

FOR SALE TAS

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WANTED NSW

- ASSEMBLY and installation instructions for vertical antenna type HYGAIN ELECT by LINCOLN type 57010, Maurie Haylor Mill St, Riverstone NSW (02) 627 1434.
- CW PROGRAM on tape suit Commodore 64, varying speeds. Freda VK2SU QTHR (069) 681 556.

WANTED VIC

- FTV901 TRANSVERTER and YO901 for Yaesu 900 series, swap YO101, Fred VK3APA (058) 646 287.
- TYPE A MK III and BC611 WW2 txcvrs in reasonable or repairable order. Will arrange suitable financial recompense. Ian Keenan VK3AYK QTHR (03) 523 9405.
- YAESU FT75 HF TXCVR. Need not be in working order, but prefer a unit in reasonably clean condition. Matching PSU would also be of interest. VK3AFW QTHR (03) 579 5600 (evenings).
- CIRCUIT DIAG for University TST old valve emiss tester multimeter, VK3TV, A Styles, RMD 2943, Benalla 3673.
- ARTWORK for MDRC Diigital Display and Frequency Synthesiser for ICOM IC22S, any expenses cheerfully re-imbursed, Bill VK3TAJ (057) 572 174 (AH), (057) 572 005 (BH).
- KENWOOD TS940S TXCV, must be MINT cond, top price paid, Ron VK3OM QTHR, (059) 44 3019.

WANTED QLD

- WANTED for 10 GHz, DIODES MA44140, MA144150, BXY41, DH292, MD4901, or equiv varactors. John VK4TL (070) 968 328 or PO Box 508, Malanda QLD 4885.

WANTED SA

- YAESU FT7B, must be in good condition, Neil VK5ANF (085) 82 1270.

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- 1991 VK/ZL CONTEST RESULTS available, large SASE from VK7BC, QTHR, or from NZART magazine (Break IN).

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Name:..... Call Sign: ..... Address: .....

Solution to Morseword No 67

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	1	2	3	4	5	6	7	8	9	10
1	•	•	•	•	•	—	•	•	—	•
2	—	—	•	•	—	•	•	•	—	—
3	—	•	—	•	•	—	•	—	—	•
4	•	•	•	—	•	•	•	•	—	—
5	•	•	•	•	•	—	•	—	•	•
6	•	•	—	•	—	—	—	—	—	•
7	•	•	—	•	•	—	•	—	•	•
8	—	—	•	•	•	—	•	•	•	—
9	•	•	•	—	•	•	•	—	•	•
10	•	—	•	•	•	•	—	•	—	•

Solution for Morseword No 67
Across: 1 suite; 2 grim; 3 king; 4 view; 5 sure; 6 fog; 7 fare; 8 gust; 9 steel; 10 lear.
Down: 1 peel; 2 left; 3 fade; 4 sneer; 5 flee; 6 cone; 7 hast; 8 for; 9 toast; 10 ended.

HOW TO JOIN THE WIA

Fill out the following form and send to:

The Membership Secretary
Wireless Institute of Australia
PO Box 300
Caulfield South, Vic 3162

I wish to obtain further information about the WIA.

Mr, Mrs, Miss, Ms:.....

.....

Call Sign (if applicable):.....

Address:.....

.....

.....

State and Postcode:.....

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